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ABSTRACT

This guide is designed to aid agricultural education teachers in planning and implementing adult courses in farm business and management. Introductory chapters on the elements of modern adult education, the organization of an adult agricultural education program, and suggestions for using the course of study, are followed by course outlines for Farm Management I--Farm Records and Accounts (15 units), Farm Management II-Farm Business Analysis (12 units), and Farm Management III--Farm Business Organization (12 units). Instructional units provide teacher objectives, suggested teaching activities and experiences, content, and references, and many are illustrated with charts, tables, sample forms, and graphs. Selected bibliographies are included for each course of instruction. (AW)

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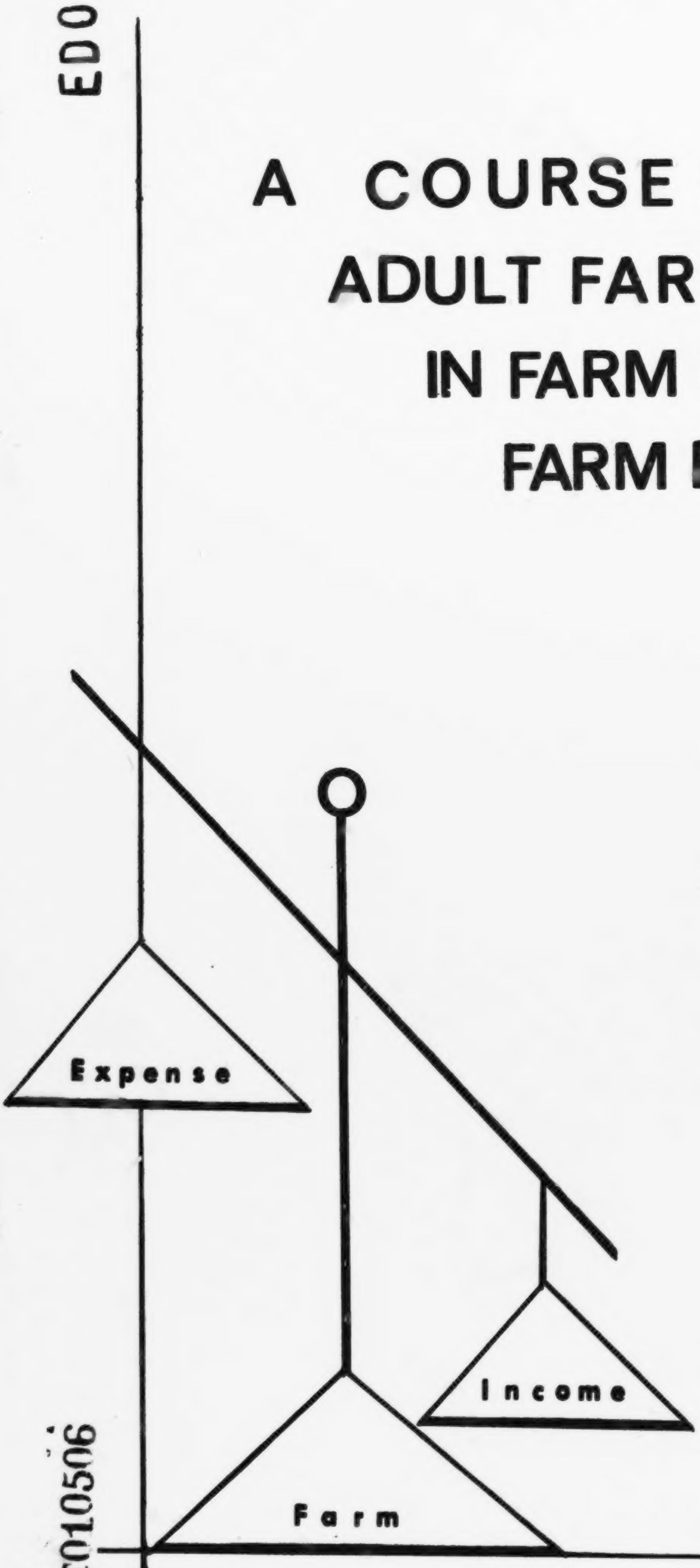
A COURSE OF STUDY FOR ADULT FARMER INSTRUCTION IN FARM MANAGEMENT AND FARM BUSINESS ANALYSIS

SECOND EDITION

Palan AND Persons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A COURSE OF STUDY
FOR
ADULT FARMER INSTRUCTION
IN
FARM MANAGEMENT
AND
FARM BUSINESS ANALYSIS

Second Edition

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1969

FOREWORD

This second edition of the Course of Study for Adult Farmer Instruction in Farm Management and Farm Business Analysis is a significant contribution to Agricultural Education. It capitalizes on the advances made in instruction and in research in the field of Farm Business Management Analysis and should provide a very useful teaching tool to those who teach in this field.

As we move ahead in program development in vocational agriculture, we must give the highest priority to problems that are crucial to farmers. These problems are both immediate and long range. They are rooted in the economics of Farm Management for it is in the decision making process that a farm operator establishes his level of success or failure. Because this course of study identifies itself with the significant and real needs of operators of farm businesses, it should prove invaluable to those responsible for instruction in this area.

Teachers who have used the first edition of this course of study will find that the entire content has been revised and rewritten to bring it up to date. Certainly this is not intended as a rigid course of study, but rather as a guide to instruction and a suggestion that will assist those planning programs of instruction at their local level. Basically it represents an approach to what might very well be the most significant aspect of vocational agriculture at this time. The authors are to be congratulated for the contribution that they have made.

Milo J. Peterson, Head
Department of Agricultural Education
University of Minnesota

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CHAPTER I

INTRODUCTION

"Adult farmers are becoming increasingly aware of their need for education related to the business of farming. More are enrolling in adult farmer courses each year and most rural communities are now finding enrollment demands so great that several courses must be organized to accommodate them. They not only need vocational education for farm management, but welcome programs specifically organized to meet their particular needs."[1] From the standpoint of results, it is by far the most important phase of vocational education in agriculture. Adult farmers need, want and are in a position to use agricultural instruction.[2]

Adult education in agriculture over the past forty years emphasized approved practices as they applied to a variety of enterprises. The adult classes were used primarily to keep interested farmers up to date on whatever their interests happened to be. Under this plan of instruction, each of a series of ten meetings may have dealt with a different topic. Some farmers attended only a few meetings, while others with greater interests attended very regularly. Generally, farmers were not officially enrolled in the class and were not likely to attend meetings unless particularly interested in the topic. Because of the variation in attendance of farmers and the infrequent contact in the classroom, it was difficult for the vocational agriculture instructor to become well enough acquainted with each farmer to maximize the benefit from on-farm instruction. Such instruction usually dealt with approved practices having little or no relationship to the whole farm business. While this type of adult instruction may have met the needs of farmers of a decade or two ago, it is no longer adequate. The tremendous changes in agriculture over this same period point to the need for an instructional program that is complete and thorough. The instruction must aim first at the business as a whole and secondly at the parts which comprise the whole business.

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[1] Vocational Education for Rural America, Yearbook 1958-59, Department of Rural Education, pages 71-72.

[2] Handbook on Teaching Vocational Agriculture, Phipps-Cook, The Interstate, Danville, Illinois, 1956, Chapter 22.

Problems and needs of the farm operator today have expanded to a greater degree than the physical size or capital investment of the individual farm. Closer margins between cost of production and selling price have made it necessary for the farmer to know more about his business. He must pay more attention to both production and financial details if he expects to compete with others. He must know how to produce crops and livestock to give a return to his capital, land, labor and management. He must know how to combine his crop production with livestock production in a way that will give him optimum return to his capital and family labor. Even after this ideal combination has been determined, he must know how to combine machinery, fertilizer, insecticides, herbicides, varieties and tillage practices for crops. He must know how to combine labor, feed, disease control, housing and equipment and other costs to produce livestock products efficiently. Above all this, he must know how to study markets and interpret market trends. He also must be skillful in the operation, repair and maintenance of machinery and equipment. He must know the latest techniques of crop production and the most up-to-date practices relating to livestock enterprises. In addition to knowing what to do, he must also know how to do it.

The purpose of this course of study is to outline a complete program of instruction for adult farmers. This book is intended to serve as a guide for instructors of vocational agriculture in setting up a program for the local community that will help the adult farm families face the business management problems that are before them and arrive at sound decisions in a logical and systematic manner.

CHAPTER II

ELEMENTS OF A MODERN ADULT EDUCATION PROGRAM FOR FARMERS

It has been illustrated earlier that the problems of the modern farm family are vastly different from those of a decade or two ago. In a relatively simple business, each problem can be identified, isolated, studied, evaluated and solved. This is not true in modern agriculture. Here there are many factors - each more or less independently involved - but complicated by the fact that each factor is so completely interrelated with the others that it cannot be treated as a single variable. An instructional program for adults must keep each phase of the farm business in proper perspective with the others.

Along with a caution against over-simplification, a program of instruction for adult farmers should include three identifiable phases: (1) farm management, (2) mechanized agriculture, and (3) enterprise. Each phase is related to the others much as the factors which influence farm business are interrelated.

FARM MANAGEMENT

The farm management phase is the foundation for the entire adult program of instruction. It begins with individual farm families enrolled in specific courses composed of definite units taught in an organized sequence. This study of farm management should be spread over a period of three or more years to permit families to keep pace with the instruction in carrying out programs to reach their objectives.

Management is primarily a decision making process. To be successful in management instruction it is important that instructors understand the logical organization of activity which leads to making a sound decision. The topics which are suggested in the lessons for farm management follow the sequence suggested by the ten steps. These steps are as follows:

1. Analyze the present situation.
2. Locate the problems.
3. Set up objectives or goals.
4. Size up the resources.
5. Look for various alternatives.
6. Consider probable consequences and outcome.
7. Evaluate the expected results.
8. Decide on the course of action.
9. Put the plan into effect.
10. Evaluate the results of the decisions.

Because agriculture is a dynamic industry, it is not possible to locate a problem, follow through on alternatives, put a new plan into effect and expect the job of farm management to be completed. Management decision making is a continuing process with new problems coming in and new solutions being found. It is likely that several problems will be in the various stages of the decision process at any one time. For some problems the farmer may be establishing goals; for another problem he may be still analyzing the present situation while for still another he may be choosing a particular course of action which he intends to put into effect immediately. The management education program is simply the starting point in the over-all evaluation of the farm business and a systematized approach to solving problems that will follow.

Developing an understanding of the basic economic and management principles is an important activity in management instruction. Many of the units of instruction in this book contain examples of the direct application of economic principles to farm businesses, even though the principles are not identified in the text. Instructors should be alert to the opportunities to inform their families of the principles which apply to the problems they are studying. However, instructors should avoid directing disproportionate attention to defining and discussing the principles of economics unless there is opportunity to make direct application of the principle to the businesses represented in the class.

The farm management phase must have as its beginning, an accurate and realistic source of information which will be used to analyze the present situation, locate the problems, and aid in setting up objectives. Information about the business is also essential to evaluate the resources. There is only one natural place to go for such source material and this is a record of the farm and home business. No other source can provide the data necessary for sound planning. A full business cycle is necessary before any complete summaries can be made which can be used to aid in the first four steps of the decision process. Therefore, the first year of the farm management phase will be used to motivate families to keep good records and to instruct them in keeping accurate accounts. The necessary individualization in the program for the first year can be developed through on-farm instruction. On-farm instruction in the early stages of the program is extremely important in developing the confidence of the family in the instructor. The instructor must get acquainted with the family and the farm without seeming to pry. Every care must be taken to keep all discussions and problems of the family on a strictly confidential basis. Any breach of this rule can have nothing but harmful effects. The need for confidentiality will offer no problem to the instructor who uses common judgment. Many families enjoy discussing their own business and will often inject problems of their farm into class discussion. Others, however, are more sensitive to public discussion of their private business.

Any efforts expended on keeping farm and home records are entirely wasted unless some good use is made of the records. Although complete summaries cannot be made until a full business cycle has been completed, many uses can be made of the accounts during the first year. The most obvious of these are checking on feed supplies and other inventories; providing credit information; planning the cropping program; yield information; checking cash balances and cash flow; planning for income tax, collecting a historical record of price; determining and completing livestock information such as births, deaths, sales and purchases. Any of this information that can be put to good use during the year will make the families more aware of the value of these records and increase their motivation to keep a current and accurate account.

An analysis of the first year's records is a most logical starting place for the beginning of the second year. Since this analysis must be done efficiently and accurately, it can best be done at one of the area analysis centers where trained personnel can follow carefully planned procedures and benefit from electronic data processing. Organized classroom material during the second year deals with general interpretations of a farm business analysis. Farm families can recognize general signs of weaknesses and strength throughout their own farm business by a study of their business analysis. The class material suggested in this book will also furnish background information which will be very useful when the vocational agriculture instructor helps the family with more specific individual interpretations on farm and home visits.

The third year of the farm management phase is a continuation of the second in that another year's farm business analysis is available for study. Class work emphasizes enterprise efficiencies and deficiencies to a greater degree, since trends within the business as shown by the record analysis, will begin to be significant. Major emphasis during the third year can be pointed toward a beginning study of farm business reorganization. Methods for developing reorganization plans can well be illustrated through the use of example farms. Since farm families will approach the actual job of reorganization at varying times, any concrete plans must be developed on an individual basis. Organizing the farm to better meet farm and family goals will be one of the major areas covered on farm and home visits.

MECHANIZED AGRICULTURE

The average farmer in southern Minnesota has more than half of his capital invested in machinery, equipment and buildings. This major area of investment and use cannot be overlooked in any comprehensive education program for adult farmers. Mechanized agriculture should include a determination of the need for and selection of machinery, equipment and buildings as well as the economics of ownership. The influence of machinery and equipment on the labor output per man is of major significance in modern agriculture. At the same time the capital expenditure must be carefully weighed to determine whether increased production or labor efficiency will justify the acquisition cost. Farmstead planning and building requirements fall into this same important category.

The farm operator must know enough of the principles involved in the operation of his farm machines to carry out the proper maintenance and adjustments needed for successful operation. The same general skills and knowledges are necessary to effectively manage and operate choppers and corn pickers, to say nothing of feed mills, augers, conveyers and metering devices used for materials handling. Machinery and equipment repair, as well as the construction and repair of buildings, are important skills for many successful farm operations.

A series of meetings should be conducted each year on some specific area of mechanized agriculture. One year the topic may be operation, adjustment, maintenance and repair of harvesting machinery. Another year planting machines, materials handling or farm building construction may be studied. The topics should be determined according to the needs and interests within the community. Agriculture mechanics is so broad and diversified that all of the important areas cannot be covered before community needs will require a repeat of the more popular pahses.

ENTERPRISE CLASSES

The enterprise phase of a balanced adult farmer program bears the most similarity to adult farmer programs of the past. It is necessary to systematically provide an opportunity for the farmers in the community to get up-to-date on new production and management practices within an enterprise. This can be done by offering one or more courses each year in such areas as swine feeding and management, crop production, dairy feeding and management or other enterprises. Topics to be studied should be determined by the needs and interests in the community. The enterprise phase fits in well with the farm management phase in two respects. First, it furnishes opportunity to members of the farm management group to "sharpen up" enterprises found to be weak through the farm business analysis. Second, it provides a common meeting ground for the vocational agriculture instructor and farmers who may be prospective members of the farm management classes.

The omission of courses of study for the mecahnized farming and enterprise phases in this book was necessary because of limitations of space. This omission does not take away from the importance of either when weighed as part of a complete program of instruction for farmers in agriculture.

CHAPTER III

ORGANIZATION OF AN INSTRUCTIONAL PROGRAM OF ADULT EDUCATION IN AGRICULTURE

The adult education program in agriculture must be organized in such a manner that at all times the group instruction, as well as the individual instruction, is aimed toward the over-all objectives of the course. To be effective in meeting the needs of the cooperating farm families it must be systematized around the basic principles of farm management.

Adult instruction in agriculture is not unlike other courses offered by the public schools. It must be systematized instruction possessing the following five characteristics:

1. Specific enrollees in each course.
2. Specific units taught as part of each course.
3. A definite and regular sequence of courses.
4. Continunity between courses with progression toward the most effective farm business organization and greatest operating efficiency.
5. Individual on-farm instruction as an integral part of the teaching plan.

As these five features are analyzed, the importance of each becomes very apparent. A vocational agriculture instructor would not consider teaching a course in farm welding unless he had a system so that individuals would have Lesson I before going on to Lesson II. The student must learn how to run a bead before he can properly weld a broken machine.

Nor would an instructor with facilities for ten consider teaching fifty farmers in one course of farm welding. If facilities are overloaded any course becomes less effective, but - more important - without time for individual supervision, the course would be a dismal failure. The class members must be definitely enrolled so that each farmer will have Lesson I before he attempts Lesson II. In addition, the class enrollment must be definite and limited to the number that can be given individual attention and on-the-farm instruction.

Every teacher of vocational agriculture has, at one time or another, been asked a question similar to this: "What is the best kind of a dairy barn to build?" This is, without doubt, a "loaded" question that cannot be answered until many other questions have been asked and answered. The vocational agriculture instructor should be thinking, though perhaps not directly, "are you a good dairyman?" This question would be just as "loaded" as the first because the farmer would have to ask himself many other questions before he could provide the answers. In some cases this farmer may be able to check back on his records to find information. In many cases, however, he would have to begin keeping records which eventually would furnish part of the basis for the answer. Even if he could be reasonably certain that he was a good dairyman, he would find himself involved in a whole maze of other interrelated questions. How does the dairy enterprise fit the farm, the available labor and the available capital? How does the dairy enterprise compete with, or supplement other enterprises? What is the future market for dairy products in the area? This relates back to the more basic question, "Shall I have a dairy enterprise?", even before the question, "Shall I build a dairy barn?" Up to this point nothing has been said about the size of the dairy barn, the cost, the location or the type of barn because all of these are contingent upon the answers to more basic questions. These many interdependent questions point up the need for taking first things first and the necessity of basing instruction first on principles and later on details. There is more or less definite order in which questions must be asked if a logical and sound solution is to be reached.

The adult education program in agriculture must begin with a good foundation. The educational activities should help the families with the first step - that of building up a stockpile of information about their own business upon which they can base judgments at a later time. The best way to accomplish this task is to develop a good set of farm records. The use which will be made of record information should be illustrated so record-keeping families realize that every entry made will have some future value. Using the Minnesota Farm Account Book facilitates uniformity of teaching the mechanics of entries and makes possible a comparative analysis of the data contained in the record at the end of the year. The first year may be called "Farm Management I", "Beginning Farm Records", or a number of other titles. Briefly, the beginning course deals with the reasons for keeping records, what records to keep and how to keep them easily and accurately. Since farming is a year-round business, keeping farm records must also be a year-round task. The year-round feature of the farm business makes it natural to hold organized class meetings throughout the entire year with the most frequent meetings being held in the late fall and early winter when it is easiest to fit meetings into the farm work schedules. At this time the new year's records are being started and the past year's records are being completed.

The on-farm instruction during the first year will accomplish several purposes - it will enable the vocational agriculture instructor to become acquainted with the farm and the farm family; it will furnish opportunity for the family to get acquainted with the instructor and gain confidence in his understanding and knowledge. In addition, it will furnish opportunity for instruction in farm accounting procedures that require personal attention not possible in a larger group. The harmony that is developed during this first year between the instructor and the farm family will determine the success or failure with which the family persists in the management program in succeeding years. Some on-farm-instruction during this year will be devoted to improvement practices that obviously are not directly related to efficient management. Many times work of this kind, though relatively unimportant as far as the whole farm business is concerned, furnishes the opportunity for development of good communication between the instructor and the farm family. A farm and home visit each month during the first year, in addition to one or more class meetings per month, should provide contact frequently enough to maintain high interest and deal with problems relating to keeping and using the farm accounts. It also permits time to observe cropping and livestock programs on the farm.

Closing out the Minnesota Farm Account Book and sending it to the appropriate area vocational school for analysis will complete the first year of instruction. This naturally leads to the second year which deals with the study and interpretation of the farm business analysis in general, as well as the individual study and interpretation of the first farm business analysis of the individual farm.

Some instruction during the second year deals with the continuation of farm and home accounts. As the families become better acquainted with the account book procedures, considerably less time will be spent in this area that was spent during the first year. Refinements in feed records and greater accuracy in inventories and depreciation are stressed as accounts for the second year are begun. The main emphasis during this year is on the study and interpretation of the past year's analysis. The instructor assists in the interpretation and study of the business analysis by illustrating signs of weakness or strength within the business and pointing out the need for further study of these areas. Major study can be made of the capital investments in livestock, machinery, equipment and buildings on the basis of one year's record. Size of the business, as measured in work units, can also be emphasized. Feeding efficiencies should also be studied, but only preliminary judgments can be made on the basis of one year's record.

The third phase of the farm management program may be called "Farm Business Organization", "Advanced Farm Management", or any similar title. During this phase, farm and home accounts will be continued. The analysis report for the second year's record will be studied and interpreted. Interpretations now begin to be useful in making plans for future changes or expansion in various areas of the farm business. Studies now can be made to determine income possibilities with various combinations of crops and livestock enterprises. The importance of transitional stages when major changes are contemplated must be given considerable emphasis.

As the farm family progresses toward the development of alternative plans and the selection of the most appropriate alternatives, more emphasis will be placed on work with individual families through on-farm instruction and less emphasis on group instruction. At this point the help of specialists in buildings, materials handling and evaluation of plans is most worthwhile for both the instructor and the farm family.

While this book does not contain a detailed course of study for groups enrolled for more than three years, this omission should not be interpreted as placing little value on continuing instruction. Practice shows that some families require the most assistance beyond the third year. As they plan a reorganization of their business they need additional help in searching out the alternatives and evaluating the outcomes of their many possible decisions. Research shows the returns to farm management instruction to continue well beyond the third year and in fact, demonstrates the highest returns for educational investments beginning with the sixth and seventh year.

Research serves best to demonstrate that improvement in farm operation, organization and efficiency is highly individualized. Instructors must be patient to permit their farm families ample time to thoroughly weigh their many possible alternative decisions. Management is primarily a decision making process, but making the decision is the prerogative of the farm family.

CHAPTER IV

HOW TO USE THE COURSE OF STUDY FOR ADULT FARMER INSTRUCTION

Having a course of study available is not enough. The user must know how the authors intended the course of study to be used if it is to be most effective. The brief description which follows is intended to convey these intentions.

The title of each lesson should be descriptive of the content and offer a challenge to the farm family. Titles may be used in promotion of the management program. Preparation of public relations materials for use with prospective farmer cooperators and other community leaders is a good way to inform the public of the purpose and content of adult agriculture instruction.

Each unit begins with a list of teacher objectives. Users should translate these simple teacher objectives into student objectives. The student objectives should state the behavorial activities in which the farm family is expected to engage as a result of the instruction. Teachers should keep in mind the ways in which attainment of the objectives will be measured, in order to be able to evaluate their instruction.

The subject content presents, in brief outline form, the major topics related to the objectives. Each instructor must prepare instructional materials that will more fully present the subject content. A list of references at the close of each part or unit will be helpful in locating relevant material. In addition, the instructor must draw from his knowledge of the local area to insure that the subject matter is related to the problems in which the class members may be involved. Many of the tables and charts presented in the subject outline can be used as source data for preparing visual aids for class use. The data should be revised each year as new summaries of farm records become available through the area vocational technical school agricultural programs. Instructors will find it useful to be alert for individual farm record summaries that can be used to illustrate the various lesson units.

Often instructors know what they want to teach, but have difficulty in deciding how to proceed. The suggested teaching activities and experiences will demonstrate procedures that have proven successful to the authors. Farm families will find the activities worthwhile. They will be challenged by many of the procedures to think carefully about their business and to evaluate their own plans and past actions. Many units suggest activities for the farm families as a method of focusing their attention on the subject for discussion and stimulating them to participate in the learning activity.

The activities suggested for individual on-farm instruction help to bring the generalities of the classroom to the specifics of the farm families own farm and home business. Many of the activities have been selected from A Guide to On-Farm Instruction[3] by Eugene Francis. They may serve as a basis for scheduling the major activity of many of the farm visits. Because on-farm instruction is so vital to the success of the management education program, instructors must plan this phase very carefully. Individual instruction is expensive. Farmers and experienced instructors consider it the most valuable phase of instruction. Any instruction with such high value and comparatively high costs deserves every effort to maximize the returns to the educational investment.

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[3] Francis, Eugene V. A Guide to On-Farm Instruction in Farm Management and Farm Business Analysis, Agricultural Education Department, University of Minnesota, St. Paul, 1967,147 pages.

The on-farm instruction is suggested on the assumption that there has been pre-enrollment contact with the family at which time the instructor became acquanited with the family, secured an enrollment agreement and explained the operation of the program. The instructor must make clear the obligations the family has for attending classes or group sessions and of availing themselves for on-farm instruction.

CHAPTER V

FARM MANAGEMENT I - FARM RECORDS AND ACCOUNTS

The vocational agriculture instructor in each community must develop his own method of contacting and enrolling families in Farm Management I. Personal contact, invitation by letter, announcements in the local newspaper, local radio broadcasts or perhaps contact through high school students; all these methods are appropriate. Probably a combination of several of the above media will work best. An enrollment goal, as well as the maximum number that can be handled in each class, should be determined well in advance.

A carefully laid plan must be followed and special effort put forth to begin Farm Management I with a class of interested families. Progress in enrollment and interest in later years will depend on the success of the first year. For this reason, an enthusiastic start and dedicated follow-up will pay future dividends.

All of the preliminary planning and enrolling should be accomplished far enough in advance so that the first organized class can be held no later than October. An early start permits time to present introductory material and motivation units before beginning on the Minnesota Farm Account Book in December.

Farm earnings are necessary to make funds available for family living. Choices must often be made between personal expenditures for family living and production expenses connected with the farm business. Because of this interrelated spending, it is very important that planning in both of these areas be done jointly by the farmer and his wife. This planning can best be done if both the farmer and his wife participate in the farm management phase of the adult program. The interest and participation of the farmer's wife will often result in a more accurate and up-to-date farm account book. Even though the housewife usually has her time fully occupied with regular duties, she most often will find the time to keep farm account book entries of receipts and expenses up-to-date throughout the entire year. Often the farmer will neglect this task during periods of pressing farm work. If the wife keeps this phase of the farm account book and the husband keeps the feed records and inventories, a very accurate and complete record will result. This combination often furnishes opportunity for the partners to duscuss problems relating to the farm and the home that heretofore have not been openly discussed.

The following teaching units are suggested as guides which must be modified to fit local conditions and kept up to date with the most current information.

UNIT I - I

STIMULATING AN INTEREST IN FARM RECORDS

Teacher Objectives:

1. To stimulate the interest of farm families in developing a more profitable farm business and providing a more satisfactory family living.
2. To show changes in farming over the past 20 years.
3. To show that increasing complexity of the farm business has resulted in greater income differences between high earning and low earning families.
4. To illustrate a greater need for an intensive study of the home farm.
5. To stimulate families to establish general short and long term goals for the farm and family.

Part I - How Does The 1968 Farm Compare With The 1948 Farm?

1. Subject Content:

    A. Comparison of farm size in 1968 with 1948.

    B. Comparison of changes in capital investment.

    C. Comparison of cash receipts.

    D. Comparison of cash expenses.

    E. Comparison of family needs.

    F. Comparison of records necessary to operate a farm business.

        1) Business analysis.
        2) Income tax records.
        3) Social security records.

    G. Comparison of output per worker.

    H. Comparison of livestock feeding and management practices.

    I. Comparison of crop production practices.

    J. Comparison of machinery and equipment complexities.

2. Suggested Teaching Activities and Experiences:

Reference material should be used to show how farming has changed in complexity over the past twenty years. Through class discussion this material can be used to illustrate that farming has become both larger and more complex.

3. References:

A. U.S., Minnesota and County Agricultural Census.

B. Vocational Agriculture Farm Analysis, Annual Report, 1968.

C. The Visitor.

Part II - How Has Increasing Complexity Affected the Farm Business?

1. Subject Content:

Measures of Farm Earnings*

	1948	1968**
Operator Labor Earnings - High Profit Farms	$ 4,930	$ 16,640
Operator Labor Earnings - Low Profit Farms	186	353
Differences	4,744	16,287
Farm Capital - Average Farms	23,725	112,494
Receipts - Average Farms	10,253	46,298
Expenses - Average Farms	7,876	38,058

*Annual Report in Southeastern Minnesota, 1948, Mimeo No. 178, University of Minnesota.

**Vocational Agriculture Farm Business Analysis, Annual Report, Austin Area Vocational School, April 1969.

2. Suggested Teaching Activities and Experiences:

Through discussion, point out the significance of the differences between 1948 and 1968 farms. Illustrate that earnings of good farms have tripled while low profit farms have increased only slightly. Raise the question: How can you be part of the high earning group?

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

Part III - What Does Your Family Want?

1. Subject Content:

   A. "Our Family Goals" worksheet.

   B. Comparison of the business and the farm family needs to a growing tree.

2. Suggested Teaching Activities and Experiences:

Begin class with a brief introduction of family goals. There was a time when farming was thought of simply as "a way of life". On some farms, the family still thinks in these terms. However, most farm families are no longer satisfied to do without the goods and services which other people enjoy. Consequently, the profit motive has become an important aspect of farm operation. Each family has a different standard of living which stems from different goals and values. Farming today is a highly complex business. In comparing the farm family and farm with the tree, the "soil" of land, labor and capital must be used by the farm family to construct a thriving farm business "tree", (refer to chart of tree). With careful management, the family tries to develop the main root system for the crop and livestock program. Caring for the root system is essential. Good crop varieties, proper fertilization, weed control, balanced rations, etc., are needed for vigorous growth. The products developed flow through the market structure and provide income for use in paying debts, making farm improvements and for family living. The income to be used for family living, together with community facilities and the time, energy, health, skills and knowledge of the family members are the resources available for family living. From these the family needs of recreation, education, shelter, clothing, food, home improvement and others are met. Whether this proves to be a satisfactory level of living or not will depend upon the family's goals and adequacy of the farm business. Point out that what a family wants is the motivation for good management of the farm and home business. In setting up goals, the following points should be recognized:

a. All family members should contribute.
b. Recognize that there are both individual and family goals.
c. Recognize both long and short term goals.
d. Select goals in terms of available resources.
e. Competition between goals is normal and desirable.
f. Goals must be modified as resources change.

Have farmers and their wives work together in completing "Our Family Goals" worksheet. After allowing sufficient time for this, the dependence of the fulfillment of family goals from a profitable farm business should be brought out in discussion. At this point, the ideas should have been established that a profitable farm business is the key to supplying the wants and satisfactions for the entire family. This leads to a final question - Where does one begin to determine whether the farm business can be more profitable?

Future classes will be pointed toward the answer to this important question.

3. References:

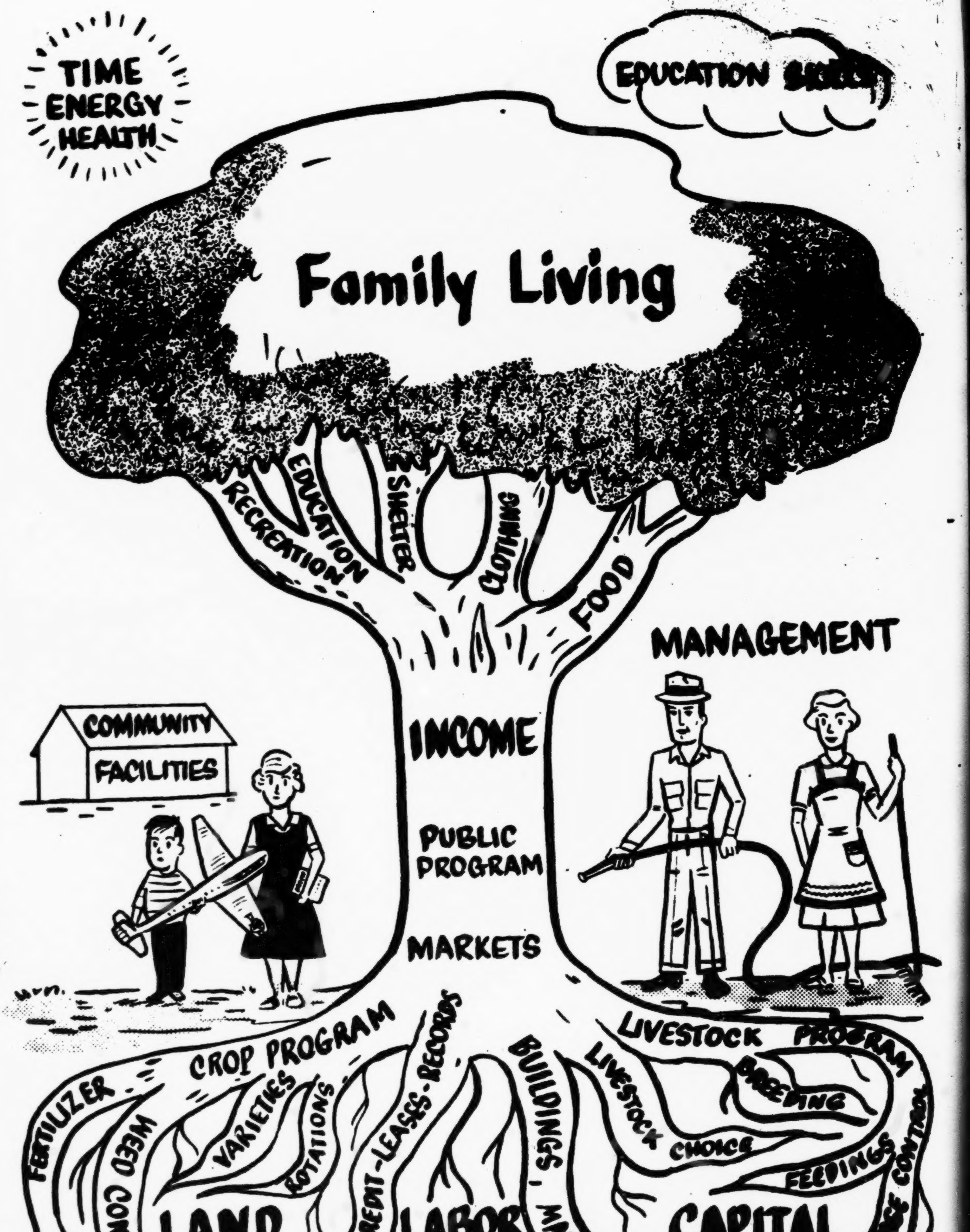
A. U.S. and Minnesota Agricultural Census.

B. Vocational Agricultural Farm Analysis, Annual Report.

C. Profitable Farm Management.

Part IV - Suggested On-Farm Instruction Activities.

Get acquainted with the family and the farm. Walk the farm to get acquainted with the cropping program and to make some estimate of the yield potentials of the farm. Discuss family and farm goals. Go over the "Family Goals Worksheet" with the family.


TIME
ENERGY
HEALTH
EDUCATION SKILLS
Family Living
RECREATION
EDUCATION
SHELTER
CLOTHING
FOOD
MANAGEMENT
COMMUNITY
FACILITIES
INCOME
PUBLIC PROGRAM
MARKETS
CROP PROGRAM
FERTILIZER
WEED CONTROL
VARIETIES
ROTATIONS
CREDIT-LEASES-RECORDS
BUILDINGS-MACHINES
LIVESTOCK PROGRAM
LIVESTOCK CHOICE
BREEDING
FEEDINGS
[illegible] CONTROL
LAND
LABOR
CAPITAL

OUR FAMILY GOALS

A review of goals is helpful in setting our sights. Goals are a reflection of our values concerning "what ought to be". Goals may be long range or short range; they may be general or specific. Family goals may differ from individual goals. The values we hold will determine to a great extent how we use our resources to achieve goals. What we actually do sets our level of living. However, our standards (from which our goals are set) are above and beyond our level of living. What is our purpose in living?

We wish to accomplish the following during the next 1-2 years:

We wish to accomplish the following during the next 3-5 years:

We wish to accomplish the following during the next 6-10 years:

UNIT I - II

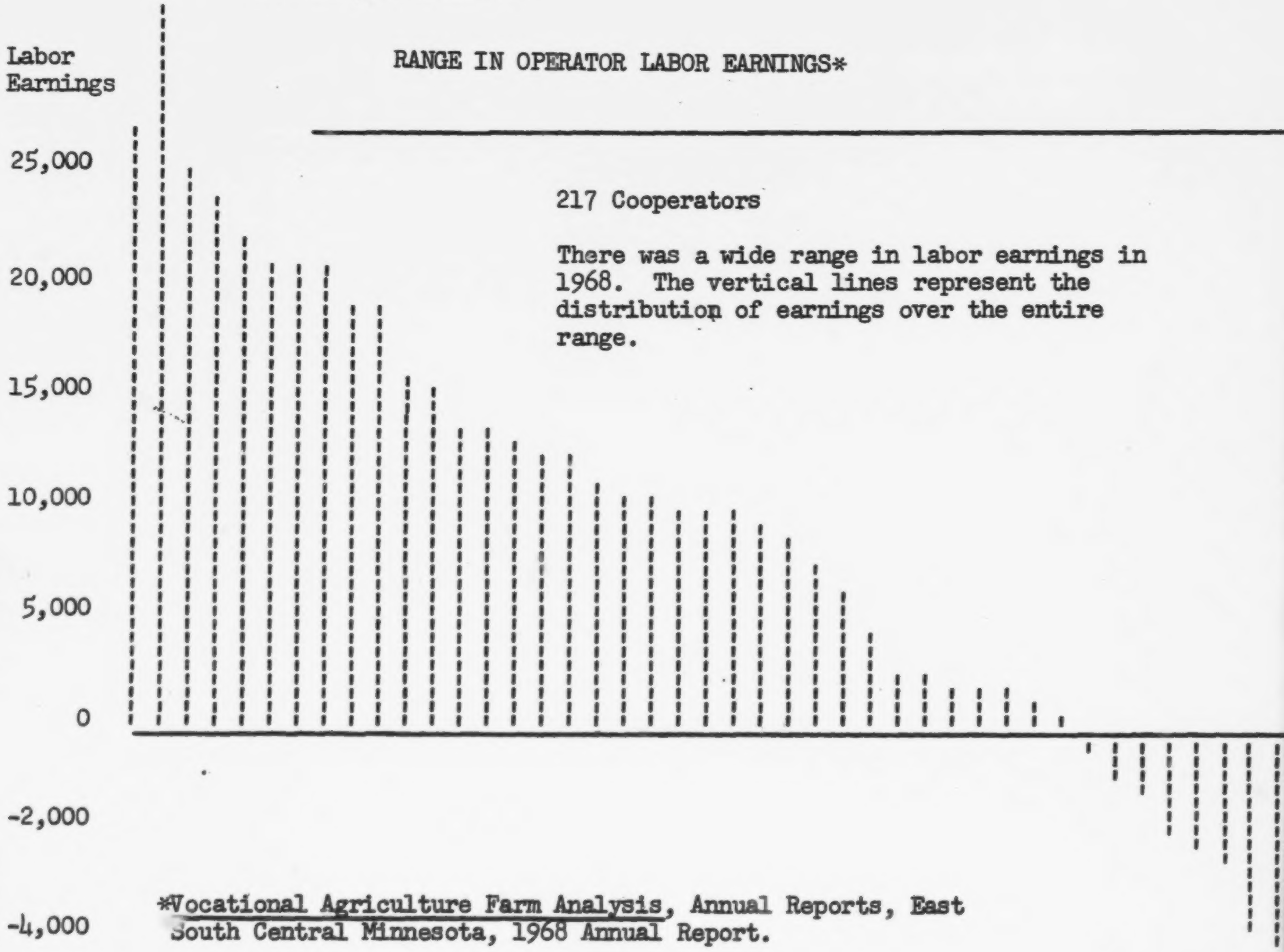
SHOWING THE NEED FOR FARM RECORDS

Teacher Objectives:

1. To demonstrate that earnings vary greatly from farm to farm and that reasons for these variations can be shown through a farm business analysis.
2. To present the major factors affecting farm earnings and illustrate the influence of management on these factors.

Part I - How Much Do Farm Earnings Vary Between Similar Farms?

1. Subject Content:



RANGE IN OPERATOR LABOR EARNINGS*

217 Cooperators

There was a wide range in labor earnings in 1968. The vertical lines represent the distribution of earnings over the entire range.

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*Vocational Agriculture Farm Analysis, Annual Reports, East South Central Minnesota, 1968 Annual Report.

2. Suggested Teaching Activities and Experiences:

Discuss the range in earnings as shown in the graph. Show how the farms are divided into most profitable and least profitable groups to compare with the average. Point out that each farmer with an analysis can identify his earnings position in the graph and compare this with the standings of other farms or groups of farms.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

Part II - How Can the Reasons for These Income Variations be Explained in a General Way?

1. Subject Content:

MEASURES OF FARM ORGANIZATION AND EFFICIENCY - 1968*

Factors	Average of 217 Farms	43 Most Profitable Farms	43 Least Profitable Farms
Labor Earnings	$8,240	$16,640	$ 353
Crop Yields - Index	100	107	87
Percent Till. Land in H.R. Crops	68.8	71.8	68.7
Ret. for $100 to Prod. Lvstk. - Index	100	108	84
Gross Ret./Till. Acre (Excl. Past.)	69.48	78.79	58.93
Livestock Units/100 Acres	35.4	43.0	26.8
Size of Business-Work Units	374.7	511.0	267.7
Work Units/Worker	262.9	325.4	200.3
Power Mach., Equip., Bld. Exp./W.U.	23.36	21.25	30.23
Farm Capital Investment/Worker	79,435	96,553	79,297

*Vocational Agriculture Farm Analysis, Annual Report.

2. Suggested Teaching Activities and Experiences:

Begin discussion by raising questions such as: What were your earnings in 1968? How do your crop yields compare with your neighbors? Do you have a high return cropping system?

Are your power and machinery costs in line? What are some of the factors which may make earnings vary? Over which variable factors do you have some control?

After informal discussion on these and related questions, show how the farm management factors point toward the answers. Point out that each family can compare itself with average, the most profitable and the least profitable groups. Illustrate that a summary measure such as the crop yield index can be compared among groups, but more significantly, individual crop yields can be compared. Show how various combinations of livestock can be compared before going to individual enterprise records.

Show briefly how these factors are inter-related. Since a detailed analysis study will not be made at this time, discussion should be kept at a rather general level, even though suggested conclusions may be an over-simplification of the problem. A detailed study of each factor will be made during the second year.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Records for Farm Management.

Part III - Suggested On-Farm Instruction Activities.

Observe the farmstead area; buildings, equipment, livestock. Ask farmer to estimate the production and profit level on his livestock enterprises. Assist him in gathering materials that may be needed for future use such as soil samples for testing, feeds and grains for nutrient analysis. Explain the functions of Soil Conservation Service and encourage the request for a farm plan if not already available.

UNIT I - III

MEASURES OF FARM FAMILY PROGRESS AND USES OF FARM AND HOME RECORDS

Teacher Objectives

1. To stimulate farm families toward a self appraisal of their farm and home situation and to help them establish measures of farm family progress.
2. To define complete farm and home records and to demonstrate the usefulness of these records.

Part I - How Can a Family Make a Self Appraisal of Its Own Sitaution?

1. Subject Content:

Home and Family Self-Appraisal Check Sheet (attached)

2. Suggested Teaching Activities and Experiences:

Begin class with a brief discussion of the seven areas of interest shown on the self appriasal form. Allow about thirty minutes for the farmer and his wife to discuss together the questions raised in the check sheet and to check "yes" or "no" responses. Select the most significant questions in each section for special discussion. Discuss in addition, any further questions that may be raised by the families.

It may be appropriate to relate the discussion to the previous meetings on family and farm goals. Many of the items to which the family will respond can be shown to be highly related to the earning level of the farm business.

Part II - What are Some of the Most Significant Measures of Farm Family Progress?

I. Subject Content:

New Worth Statement for those Families who Kept a Complete Record of all Assets and Liabilities, 1968*

NET WORTH STATEMENT-OPERATOR - 1968

	Items	Average of 128 Farms		24 Most Profitable Farms		24 Least Profitable Farms	
		Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
1.	Total Livestock	$12,558	$13,659	$16,880	$18,777	$ 8,566	$ 8,860
2.	Crop, Seed & Feed	12,106	13,651	19,232	22,583	12,739	13,764
3.	Total Power, Machinery	15,048	16,029	21,243	23,001	12,918	13,152
4.	Land	24,833	26,277	35,892	40,142	24,800	27,335
5.	Buildings, Fences, Etc.	18,098	19,790	28,913	33,868	13,961	15,347
6.	Total Farm Capital	82,643	89,406	122,160	138,371	73,984	78,458
7.	Non-Farm Assets	9,303	10,069	12,788	13,670	8,107	9,433
8.	Dwelling	4,534	4,629	6,027	6,290	3,606	3,624
9.	Total Assets	96,480	104,104	140,975	158,331	85,697	91,515
10.	Real Estate Debt	26,701	27,842	34,370	37,833	27,131	29,431
11.	Chattel Mortgages	13,348	14,906	12,157	13,679	18,101	20,418
12.	Notes	3,634	3,907	5,089	5,720	2,815	2,704
13.	Accounts Payable	1,810	1,944	1,093	1,397	2,062	2,604
14.	Total Liabilities	45,493	48,599	52,709	58,629	50,109	55,157
15.	Farmers Net Worth	50,987	55,505	88,266	99,702	35,588	36,358
16.	Gain in Net Worth		4,518		11,436		770

*Vocational Agriculture Farm Analysis, Annual Report.

2. Suggested Teaching Activities and Experiences:

Have each of the families put their net worth down on a worksheet and divide this by the number of year's farming to determine the average net worth gain per year. Point out that this net worth must be adjusted for net worth at the beginning of the farming period. Most of the families will be unable to do this because they have not yet taken inventories and determined their present net worth.

This is a good way to illustrate what can be learned after this record is begun. Emphasize that an annual net worth statement is the best single measure of financial progress.

Use the data included in subject matter to illustrate the different degrees of progress shown by 1968 records of the high and low earning groups. Point out that each of these groups could represent an individual family and through discussion bring out the significance of keeping personal spending within the limits of earnings.

Family living expenses have the first claim on farm income. Is there enough left for payment of debts? Through discussion, bring out that the comfort of the home, recreation, educational progress of the family and hours worked are also measures of family progress that may be evaluated in a more subjective manner.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

Part III - What Do Complete Farm and Home Records Include?

1. Subject Content:

A. Farm receipts and expenses
B. Inventories of livestock, crops and feed.
C. Machinery, equipment and buildings inventory and depreciation.
D. Records of feed to livestock.
E. Record of crops raised.
F. Record of livestock acquisition and disappearance
G. Non-farm assets and total liabilities
H. Household and personal records.

2. Suggested Teaching Activities and Experiences:

Begin class by introducing the Minnesota Farm Account Book to the class members. Discuss each of the areas listed under subject matter, illustrating that the book has been developed for easy and systematic recording of each of these essential parts of a complete record. Have each family fill in the information on the cover of the book and invite them to make penciled notes throughout the book as they desire.

Part IV - Of What Value are Complete Farm and Home Records?

1. Subject Content:

A. Value of records

1) To furnish information necessary for income taxes.
2) To determine farm earnings.
3) To observe financial progress.
4) To find which enterprises are most profitable.
5) To determine weakness and strength in the farm business as a whole and in specific enterprises.
6) To furnish information to evaluate personal spending.
7) To preserve information about the business for further references.
8) To supply necessary information for use when obtaining credit.
9) To supply feed input and cost data for future planning.

2. Suggested Teaching Activities and Experiences:

Ask the question, "What do you do with your records?" Many will have used records for tax purposes only. Others may have made limited use of records for other purposes. The ease of determining net farm income from Minnesota Farm Account Book totals for tax purposes should be pointed out. The other values of records listed under subject matter should be discussed briefly to show the association between needed record information in the preceding lesson unit and the use that will be made of it. Records which will not be used are a waste of time to keep; however, records which are not kept cannot be used. In order for families to be motivated to keep good records, they must understand how the records will be used and how much such use will be of benefit to the success of their business.

3. References:

   A. Minnesota Farm Account Book.

   B. Farm Records.

   C. "Financial Summaries" included in Minnesota Farm Account Book.

   D. Getting Started in Farming.

   E. Farm Management, Principles, Budgets, Plans.

Part V - Suggested On-Farm Instruction Activities.

Review an analysis report with the family. Illustrate to them how the estimates they made the previous two visits of production levels and profits can be verified by accounts. Encourage them to make notes in their account book about their estimates of livestock and crop efficiency. Review any questions they have about the accounting system to be used. Ask about the results of the soil or feed samples taken at the previous visit. Help the family record or file the information for future reference. In the case of feed samples, be prepared to assist in examining and adjusting the feeding program.

MEASURING YOUR FINANCIAL PROGRESS

1. What is your best estimate of your present net worth?* ______________

2. What was your net worth when you started farming?* ________________

3. How many years have you farmed? ____________

What Progress Have you Made?

4. Present Net Worth ______________________

5. Less Beginning Net Worth _________________

Total Gain in Net Worth _________________

6. Total Gain in Net Worth* _________________ + ____________ (years farming) =

7. Average Net Worth Gain per Year ____________

* Subtract any property that was a gift.

HOME AND FAMILY SELF APPRAISAL

Name ______________________ Address ______________________ Date ______________

Although the goals of each family differ in many respects from those of other families, the 6 types of things listed below are long time goals of interest to many. Use this check list to help clarify the possibilities you have. "No" answers may indicate places where you wish to raise further questions, discuss possible changes, or ask for information.

	Yes	No
1. Sound Farm-Home Business to Give Adequate Farm Income	____	____
Have you been getting ahead financially during the time you have been farming?	____	____
Do you consider your income adequate to meet farm, home and family needs? (Retire debts, save for education, build equity)	____	____
Do you know your living costs?	____	____
Do you feel you spend about right for each area of family living?	____	____
2. An Attractive, Comfortable, Efficient House to Meet Family Needs		
Do all family members take pride in and enjoy their home?	____	____
Do all family members enjoy entertaining friends in their home?	____	____
Are sleeping space and furnishings adequate for needed rest?	____	____
Is equipment adequate for doing work easily, quickly, and well?	____	____
Is the home easy to keep clean and uncluttered?	____	____
3. Family Members Who Are Developing and Living Happy Useful Lives		
Is everyone given responsibilities which help him grow?	____	____
Are recreational and educational reading materials provided?	____	____
Are home and community providing cultural development?	____	____
Have you had a family vacation in the past two years?	____	____
Is everyone given experiences in handling money of his own?	____	____
4. Family Relationships Which Build Security and Happiness		
Are family plans, including business, discussed by all members?	____	____
Is there time in the family schedule for talking together and enjoying each other?	____	____
Does the family enjoy meals together each day?	____	____
5. Family Members Who Have Good Health		
Does everyone in the family seem to be in good health?	____	____
6. Financial Security - Now and For the Future		
Are living expenses kept within your spending plan?	____	____
Do you have a definite plan for paying debts?	____	____
Are risks of loss by fire, accident, storm decreased by insurance?	____	____
Do you have some type of emergency fund?	____	____
Is life insurance and social security adequate to cover indebtedness, death expense, and to provide a minimum income for dependents?	____	____
Have you considered financial plans for retirement?	____	____

UNIT I - IV

THE INVENTORIES. WHY? HOW?

Teacher Objectives:

1. To demonstrate the importance of inventories.
2. To teach families how to take and record the initial inventory.

Part I - Why Are Inventories An Important Part of Farm Business Records?

1. Subject Content:

EXCERPTS FROM A 1968 FARM BUSINESS ANALYSIS OF A FARIBAULT AREA FARMER

Items	Jan. 1	Dec. 31
Size of farm (total acres)	$ 185.0	
Size of business (work Units)	591.61	
Number of workers	1.3	
Productive Livestock		
Dairy Cows	6,200	6,000
Other Dairy Cattle	1,075	1,400
Hogs	9,704	9,224
Total Productive L.S.	16,979	16,624
Crop, Seed and Feed	10,929	9,722
Power, Machinery & Equipment		
Auto & Truck (Farm Share)		1,514
Power & Machinery	7,442	5,909
Livestock Equipment	3,111	4,395
Total Power, Mach. & Equip.	10,553	11,818
Land	12,000	12,000
Buildings, Fences, Etc.	17,737	27,277
Total Farm Capital	$68,198	$77,441

****

	1968
Total Farm Sales	$34,781
Total Farm Expense (including interest on capital)	36,435
Apparent net loss	-1,654
Total Farm Receipts	44,258
Total Farm Expense	36,435
Labor Earnings	7,823

2. Suggested Teaching Activities and Experiences:

Begin class by writing the total farm sales of $34,781 and the Total Farm Expense of $36,435 on the chalk board. Explain that these are figures from a farmer's actual record in 1968. Discuss the kind of a year this farmer had from a profit standpoint. Many will come to the conclusion that this farmer had an operating loss of -$1,654. Show the farm inventory data from the subject matter section, pointing out that this farmer had more property at the end of the year than at the beginning. Show that his farm capital, which represents dollars, increased by $9,243. Show that total farm receipts were $44,258 (including $234 family living) and that total farm expenses were $36,435 (including unpaid labor, board for hired labor and interest on farm capital). Illustrate that this farmer actually had labor earnings of $7,823. Labor income could have been used instead of labor earnings; however, at this time, one or the other should be used to avoid confusion. Summarize this unit by empnasizing that little can be learned about the farm business without taking inventories into account.

3. References:

A. Records of a local farmer.

B. Getting Started in Farming.

C. Farm Records.

D. Records for Farm Management.

Part II - How Do You Begin the Inventory?

1. Subject Content:

Because vocational agriculture teachers are familiar with rules for estimating quantities of grain, hay and silage, and because values will vary considerably from area to area, no specific subject matter has been included here. Material may be taken from the back cover of the Minnesota Farm Account Book and from the references shown at the end of this unit to suit the specific situation.

2. Suggested Teaching Activities and Experiences:

Have the families begin on page 5 or 6 or 7 of the Minnesota Farm Account Book with the dairy cow inventory. Point out that values should be consistent, but conservative. Have each family fill in the information called for on the top of the Financial Summaries for Minnesota Farm Account Book. As soon as inventory values for dairy cows has been entered in the book and added, the total should be entered in the appropriate "Beginning of the Year" column under operator's share on the financial summaries. This should be done as each inventory section is completed in the farm account book. When the last line (Farmer's Net Worth) on the financial summaries is reached, the inventories are complete. Stress that an inventory as of January 1 once correctly completed, will never change.

Have the families continue through the account book, page by page, until all inventories have been completed. Emphasize the need for numbers, weights and values in these inventories.

Call special attention to crop, seed and feed inventories, pages 30-31; non-farm assets, page 55; and liabilities, page 54.

The Four Year Depreciation Schedule should be explained. The importance of setting this schedule up in conformity with the past income tax reports should be stressed.

The importance of accurate inventories to good farm records in general and the effect of inaccurate inventories on the year-end analysis should be thoroughly discussed.

The value of this unit is to get all families started on the January 1 inventories. These cannot be completed in class except by the most exceptional farmer. The very next scheduled farm visit should be spent with the family in getting these inventories completed. Since this is a big job which requires prior planning on the part of the farmer, this should be a scheduled visit for the specific purpose of completing this job.

If the vocational agriculture instructor is beginning a large number of families on farm accounts for the first time, he may wish to complete all except the Four Year Depreciation Schedule at this time. This could, in most cases, be completed at a later date when time is available. Unit XI, intended for August or September, deals with the depreciation of all capital assets in detail. It will probably be necessary to give only a brief description of how depreciation is handled at this time to enable families to get started on entering their asset records on the depreciation schedule.

3. References:
   - A. Minnesota Farm Account Book.
   - B. Getting Started in Farming.
   - C. Records for Farm Management.
   - D. "Financial Summaries" included in Minnesota Farm Account Book.

E. Vocational Agriculture Farm Analysis, Annual Reports.

F. Farm Records.

G. Current local newspapers and market reports.

H. Farm Management, Principles, Budgets, Plans.

Part III - Suggested On-Farm Instruction Activities

Assist the family in establishing the beginning inventory in the account book. Check carefully for accuracy and completeness. Review the net worth statement with them and calculate some of the common credit ratios.

UNIT I - V

KEEPING FARM ACCOUNTS CURRENT

Teacher Objectives:

1. To teach families a systematic approach for making current entries in the Minnesota Farm Account Book with emphasis on Receipts and Expenses.

2. To aid farmers in developing and maintaining a filing system for farm and home business papers.

Part I - Getting Acquainted with the Minnesota Farm Account Book

1. Subject Content:

   A. Study and preparation of the account book

      1) Index.
      2) Table of contents.
      3) Individual page instructions.

   B. Using a safety spindle

   C. Using a receipt folder or index file

2. Suggested Teaching Activities and Experiences:

   Begin class by re-emphasizing the need for detailed separation of receipts and expenses for analysis purposes. Discuss the index and table of contents on page 1 of the account book. Various systems may be used to aid the record keeper in finding and turning to pages quickly. A system of plastic tabs in an assortment of colors (available through office supply houses) may be used on the first page of each account book section as identified in the table of contents. Even though this may seem like a menial task, it can be done in class to create interest in the account book and it will save much time later on in finding pages in the account book. This may prevent discouragement later on.

Use a safety spindle and an expanding folder to illustrate how income and expense "slips" may be preserved in an orderly manner until being entered in the account book. When items have been entered, the slips should be put into the expanding folder for storage. If a definite system is not used, there will very likely be some confusion during the year as to whether or not certain items have been entered. Point out that all entries should be made with a pencil with sufficient care that each number is clearly legible. Neatness will help to avoid errors.

3. References:

   A. The Minnesota Farm Account Book.

   B. Keeping Farm Records for Analysis.

Part II - What Are Some Special Things to Watch in Making Entries?

1. Subject Content:

   A. Page 2 - Dairy Products Sold

      1) Quantity, Lbs. of Butterfat and Gross Value.

   B. Page 3 - Expenses Usually Deducted from Milk Check

      1) End of the Year Transfer.

   C. Page 9 - Other Dairy Cattle Sold

      1) Record number, weight and value.
      2) System for identifying capital gains sales.

   D. Pages 10-15 - Beef and Feeders

      1) Record number, weight and value of all livestock bought and sold.

   E. Pages 16-17 - Hogs

      1) Record number, weight and value of all hogs bought and sold.
      2) Record breeding hogs (capital gains) in columns 1 through 8.
      3) Record market hogs in columns 9 through 16.

F. Pages 18-19 - Sheep

1) Record number, weight and value.
2) Record sheep, wool and incentive in appropriate places.

G. Pages 20 through 22 - Chickens

1) Record dozens and value of eggs sold.
2) Use proper column for hens and for other chickens bought and sold.

H. Pages 24-25 - Miscellaneous Livestock Expense

1) Record entries in separate columns for each class of livestock.
    a) Record dairy cows and other dairy expenses in separate columns.
2) Separate and identify veterinary expenses from all other miscellaneous L.S. expense.

I. Pages 32 through 36 - Feed Bought

1) Use separate page sections for each livestock enterprise.
    a) Record feed bought for cows separate from other dairy.
2) Record quantities in pounds or bushels.
3) Record farm type grains such as corn or oats separately from commercial feeds.
4) Total commercial feed (quantity and value) purchased is essential. It is not necessary to separate salt, mineral or vitamins from protein feeds.
5) If a complete ration is purchased, clearly identify it as such.

J. Page 37 - Crops Sold

1) Record quantity sold and value.
2) Record all sales of landlord's crops.
3) Record diverted acre payments separately - in appropriate place.

K. Pages 38-39 - Crop Expenses

1) Record fertilizers, chemicals and other crop expenses in place indicated on the pages.
2) Allocate each expense according to crop.
    a) Record expenses for corn grain separate from corn for silage.

L. Page 40 - Custom Work Hired

1) Identify each custom work job in the description column.
2) Allocate the custom work in columns 6 through 12 to the crop or livestock enterprise for which the custom work was hired.

M. Page 42 - Machinery, Equipment & Real Estate Bought

1) Ignore columns 3 and 4.
2) Pay special attention to accuracy in column 5 (cash paid).
3) Only items purchased that are to be depreciated are entered in this section.

N. Pages 44-45 - Gas, Oil, Grease Bought

1) Be sure to record quantity (gallons). This is needed for gas tax credit and refund.
2) All items must be recorded in column 9 and again in 13, 15 or 17.

O. Pages 46 through 49 - Repair of Truck and Auto, Tractor and Crop Machinery

1) All items must be recorded in column 3 and again in 6, 7, or 8.
2) Don't forget auto and truck license and insurance.

P. Pages 50-51 - Wages of Hired Labor

1) Record time worked, wages earned and amount paid.

Q. Page 51 - Taxes

1) Be sure to record taxes paid by the landlord on rented land.

R. Page 53 - Income from Work off the Farm

1) Identify the job done and indicate machines used.
2) Work done for which social security or income tax has been withheld should not be entered here but as non-farm income on page 56.

S. Page 53 - Co-op Patronage Refunds

1) Enter in total value (column 8) and columns 9 or 10.

T. Page 54 - Money Borrowed, Payment on Debts

1) Payments on debts are entered only for money owed at the beginning or borrowed during the year.
2) Payments on items purchased during the year on open accounts are not to be recorded here.
    a) Discuss systems for recording charged items throughout the account book.

U. Pages 56 through 62 - Taxes and Household and Personal Expenses.

1) Call special attention to tax payments and refunds.
2) Refer to instructions on page 56 for classifying personal expenses.

2. Suggested Teaching Activities and Experiences:

Discuss the items listed in subject content having each family follow the pages of its own account book as this is done. Encourage penciled notes or checks as reminders of important items. This class is primarily to introduce these items to new recordkeepers. Going over this material is only the beginning. Follow-up on farm visits is imperative. Frequent inquiries such as "how are the accounts coming?" will indicate to families that the instructor is interested in the records and willing to assist when necessary. At least twice during the year the account book should be carefully checked by the instructor. Notes regarding missing and incorrect items should be made on a separate piece of paper and returned to the family with the book to assist in eliminating the deficiencies. This procedure is many more times effective than simply mentioning them. The account book itself is the property of the farm family. The instructor should be very cautious about writing anything in the account book itself. The account book is a permanent record for the family and should not be defaced, even during the teaching process.

3. References:

A. Minnesota Farm Account Book.

B. Keeping Farm Records for Analysis.

Part III - The Farm and Home Office and Filing System

1. Subject Content:

A. Purpose of the office

1) Provides a place to keep valuable papers and material from getting lost.
2) Provides a quiet place to think and work.

    3) Makes paper work easier and faster.
    4) May help prevent legal difficulties and loss of money.

B. Locating and equipping the farm office

C. Developing a filing system

    1) Purpose of a filing system.
    2) Assembling a filing system.
        a) Deciding on the scope of the system.
        b) Adopting systems to fit your needs.
        c) setting up dividers and folders.
    3) Putting your filing system into use.

D. A suggested system for farm and home filing (see Exhibit I).

2. Suggested Teaching Activities and Experiences:

Most farmers are not by nature good organizers of receipts, bills, records, reference materials, and in general, paper work needed to carry out their farm business. They can, however, be taught to improve themselves in this area.

Because the farm business is becoming more and more complex each year it is apparent that the farm family needs a place where they can carry out the day-to-day transactions and make important decisions. Sound decisions do not just happen, they are the result of careful study, research and planning on the part of the operator. A most valuable tool to aid the operator in decision-making is a place where he can work and think undisturbed by noise and family interruptions.

To illustrate to the families how they might improve their filing system and home office, the following activities are suggested:

A. Develop slides and overlays that will show several different farm office arrangements.

B. Show slides and overlays of various kinds of equipment that can be used in the office, such as desks, chairs, lighting, file cabinets, etc.

C. Show samples of the various components of a filing system such as file folders, dividers, file tabs, etc. Also show prices of each.

D. Develop a sample farm filing system with index and put in a box to show families what it looks like and how it works.

3. References:

A. Your Home Business Center, Extension Bulletin 307.

B. Successful Farming.

C. Teaching Unit for the Farm and Home Office.

Part IV - Suggested On-Farm Instruction Activities

Review the accounting procedures with the family record keepers. Check the correctness of the initial account entries. Show how the accounts will be used to file income tax information the following year. Encourage families to establish a farm office and filing system.

UNIT I - VI

THE CROPPING PROGRAM

Teacher Objectives:

1. To demonstrate the influence of a good cropping program on farm earnings.
2. To encourage families to evaluate their own cropping programs.
3. To review the factors affecting crop yields.
4. To lay the groundwork for detailed crop planning to be done individually on a farm visit.

Part I - How Do Crop Selection and Crop Yield Affect Farm Earnings?

1. Subject Content:

   A. How do the cropping programs of high earning farms compare with the low earning farms?

SELECTED MEASURES OF CROPPING ORGANIZATION AND EFFICIENCY*
1968

	Average	High Earning	Low Earning
Crop Yields (Index)	100	107	87
% Land in High Return Crops	68.8	71.8	68.7
Gross Return per Acre	$69.48	$78.79	$58.93
Tillable Acres	263.1	338.3	244.1
Labor Earnings	$8,240	$16,640	$353

* Vocational Agriculture Farm Analysis, Annual Report.

2. Suggested Teaching Activities and Experiences:

Illustrate how high crop yields and high gross return per acre contribute toward high income as shown by the analysis data. Illustrate also that yields of individual crops can be studied to find strengths and weaknesses in the cropping program.

Point out the common relationships of livestock enterprises to crop selections and illustrate that relative profitability of livestock in a given year may tend to overshadow crop selection. In years of low hog prices, for example, hogs are less likely to be profitable than dairy cattle and more corn is likely to be produced on hog farms. In such a year, crop selection may not be a factor effecting earnings or is overshadowed by other factors. The number of tillable acres and gross return per acre are most often significant factors.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

Part II - What are the Important Influences on Crop Yields?

1. Subject Content:

   A. What factors affect crop yield?

      1) Weather conditions.
      2) Native soil capabilities.
      3) Crop rotation (selection).
      4) Fertilizer and manure (prior and present use).
      5) Varieties.
      6) Planting rates.
      7) Weed and insect control practices.
      8) Tillage practices.
      9) Pasture management.
      10) Timeliness of all operations.

2. Suggested Teaching Activities and Experiences:

Briefly discuss the factors that influence crop yields as shown under "Subject Content" to lay the groundwork for this unit. Emphasize that high crop yields usually don't just happen-they are planned. Have each family draw a plot of the farm on page 28 of the Minnesota Farm Account Book. Have them show field arrangements, identify each field by number and indicate the acreage in each.

Have each family fill out the "kind of crop" and "acres" column on page 29, making certain that the "total" on the very bottom of the page is equal to total farm acres. Hay crops should be listed by individual fields with two blank lines below each field to allow space to record the yield of each crop of hay. Acres listed on page 29 should equal the acres in the plot on page 28.

This lesson will lay the foundation for a scheduled farm visit which will be used to develop a detailed cropping and fertilizer plan. Faribault Agriculture Department, Form 6, "1970 Cropping and Fertilizer Plan", has been used by this writer for several years. It has been well received by the farmers and plans developed through this procedure have been carried out with little modification. This form is completed in duplicate to provide one for the family and one for the instructor's family folder which is taken along on each visit. This planning furnishes opportunity to discuss each field in detail. Crop and fertilizer history for the past two years is recorded, along with manure use. This and soil test information, if available, is used to determine the kind and amount of fertilizer to be used and how it should be applied. Rotations, planting rates and varieties of all crops are discussed before being recorded on the form. Weed and insect control recommendations and plans are also discussed and recorded. This form is completed when total fertilizer requirements and the approximate costs have been calculated. This information is put to considerable use during the entire growing season. It is a good record for the farmer and extremely helpful to the instructor in getting acquainted with and keeping record of various field results.

√

The Cropping and Fertilizer Plan can be started in class with instructions for the farmer to collect the data necessary to complete the form prior to the next scheduled visit.

3. References:

   A. Minnesota Farm Account Book.

   B. Guide to Fertilizer Use, Extension Bulletin 277.

   C. Chemical Weed Control, Extension Bulletin 12.

   D. Varieties of Farm Crops, Miscellaneous Report 24.

   E. Soil Conservation Service Individual Farm Plans.

   F. Minnesota Hybrid Corn Performance Trials, Miscellaneous Report 28.

   G. 1969 Cropping and Fertilizer Plan.

Part III - Suggested On-Farm Instruction Activities

Develop a detailed crop and fertilizer plan. Show how the soil test information previously gathered can be used in planning the crops program. Prepare an estimated budget of expenses for crops. Include the variable cost items of fertilizer, chemicals, seed, etc.

Faribault Agriculture Department
Form 6 - September 1969

Name ____________
Date ____________

1970 Cropping & Fertilizer Plan

Field No.	1968		1969		Manure	1970	1970 Fertilizer			1971	Remarks
	Crop	Fertilizer	Crop	Fertilizer	History	Crop	Broadcast	Starter	Suppl N.	Crop	

Date of last soil tests ________ Rotation ________ Row Spacing: Corn ________ Soybeans ________
Corn Population ____ Planting rate: Corn ________ Beans ________ Yield Goal ________
Weed, Insect Control Recommendations:

Acreages
Corn___ Div. ________
Oats___ Rotation pasture____
Beans___ Total Tillable
Wheat___ Acres ____
Leg. Hay___Other ____
Can Crops___ Buildings, roads,
waste ____
Total fertilizer requirements___
Varieties:
Corn Oats
Soybeans
Other Crops

UNIT I - VII

FEED RECORDS

Teacher Objectives:

1. To motivate families to keep feed records for each livestock enterprise.

2. To teach a method for keeping feed records.

3. To stress the importance of accuracy in feed records.

Part I - Why are Feed Records Important?

1. Subject Content:

   A. Feed is the largest single item of cost for all livestock enterprises.

      1) Feed represents 45-55% of dairy costs.
      2) Feed represents 50-60% of poultry costs.
      3) Feed represents 70-85% of feeder cattle, lamb and hog costs.

   B. Crops can be either sold as cash crops or fed to livestock
      Homegrown crops when fed to livestock represent a means of marketing the crop. The returns from feeding should cover all costs including labor and yield a higher than market price for the crops fed. The alternative of marketing crops through livestock or as a cash crop is a management decision farmers must often consider.

   C. Uses of feed records in an analysis

      1) To determine the profitablity of feed (return over feed)
      2) To determine livestock feed efficiencies
         a) Amount of feed used per unit of production.
         b) Value of feed used per unit of production.
      3) To improve livestock feeding efficiencies
         a) By comparing with past year's performance.
         b) By comparing with other enterprises.
      4) To furnish information for future planning.

2. Suggested Teaching Activities and Experiences:

   Follow the outline under "subject content" to illustrate the variety of uses for feed records. This may be supplemented with actual efficiency comparisons from the latest area analysis report. This is not intended to be a detailed interpretation of the analysis - only to give general ideas of what can be learned. Use examples of cooperators who have improved feed efficiency over several years.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

Part II - A Method of Keeping Feed Records

1. Subject Content:

   A. What records are necessary?

      1) Farm grown grains.
      2) Dry roughages.
      3) Silages.
      4) Pasture days (regulate by quality of pasture furnished).
      5) Purchased feeds.
      6) Milk fed to livestock.

   B. How should these records be kept?

      1) The easiest, accurate way
         a) On basis of an occasional daily weighing of feed.
         b) On basis of feed batches.
         c) On basis of bins or cribs.
         d) On basis of silo capacity.
      2) Frequency of feed record entries
         a) Monthly, if this is convenient and accurate.
         b) By any other period of time that is convenient and accurate.
      3) Purchased feed
         a) If kept separately, by enterprise in feed bought section - this may be an annual total.

2. Suggested Teaching Activities and Experiences:

Using the outline in "subject content" discuss the general classes of feeds that are necessary. Point out that feed records, with the possible exception of milk fed to livestock, need not be on a monthly basis if another time interval is accurate and more convenient. Have each record-keeper refer to pages 26-27 in the Minnesota Farm Account Book and show how silage, for example, could be distributed between dairy cows and other dairy cattle on a percentage basis, with one entry being made under each class of livestock for a several month feeding period. Show the simplicity of feed records if hogs are fed from one crib of corn while dairy cows are being fed from another. Emphasize the importance of simplicity, but stress the importance of accuracy.

A farm visit in March or April should be specifically scheduled to review the feed records and to give individual guidance on this topic. Some families will require only the latter. The exceptional ones will have this well in hand without much effort. If early guidance is given the farmer on pages 32-36, Feed Bought, in the account book, these purchased feeds will offer no particular problem in compiling an accurate feed record. One other thought on feed records - they cannot be completed unless they are begun. An early beginning is important.

3. References:
   - A. Vocational Agriculture Farm Analysis, Annual Report.
   - B. Farm Business Management, An Instructor's Guide.
   - C. Minnesota Farm Account Book.
   - D. Individual analysis reports.

Part III - Suggested On-Farm Instruction Activities:

Review the feed records. Check the records for feasibility and completeness. Check purchased feed sections to be sure feed is assigned by enterprise and that quantities purchased are recorded. Discuss livestock feeding with the family. Show how records can be used to measure some efficiency levels already such as pound of feed per pound of milk. Suggest ways of improving and simplifying keeping accurate feed records.

UNIT I - VIII

CHECKING LIVESTOCK ENTRIES

Teacher Objectives:

1. To teach the importance of keeping accurate livestock records.
2. To teach families how to keep livestock records and to check on record accuracy.

Part I - Why Should Livestock Numbers be Kept?

1. Subject Content:

   A. Uses of livestock records

      1) To check accuracy of sales records.
      2) To check accuracy of purchases.
      3) To determine livestock efficiencies.
      4) To determine production per unit.
      5) To determine labor efficiency.

   B. Livestock transactions
      1) Livestock acquisitions.
         a) Beginning inventories.
         b) Purchases.
         c) Births.
         d) Transfers in.
      2) Livestock disappearances.
         a) Sales.
         b) Transfer out.
         c) Deaths.
         d) Butchered for home use.
         e) Ending inventories.
      3) Miscellaneous livestock entries.
         a) Heifers fresh.
         b) Sows and gilts farrowed.
         c) Ewes lambing.
         d) Number of sheep sheared.
         e) Pullets moved to laying house.

2. Suggested Teaching Activities and Experiences:

   Through discussion of the points listed in "subject content", illustrate that livestock numbers are used in many ways. Show on the livestock enterprise tables how these items are used in the analysis. Bring out the possibility of overlooking certain entries unless these records are kept and unless periodic checks are made. Since livestock profits and efficiencies must be compared with others on a unit basis, it is very important that these numbers are recorded accurately and completely.

3. References:

   A. *Minnesota Farm Account Book.*

   B. *Records for Farm Management.*

   C. *Managing the Farm Business.*

   D. *Keeping Farm Records for Analysis.*

Part II - How Can Livestock Numbers be Checked for Completeness and Accuracy?

1. Subject Content:

   A. Form for checking livestock numbers

      1) Livestock Report, F.A. 12

Acquisitions	No. Head	Disappearances	No. Head
Beginning Inventory		Sold	
Purchased		Died	
Born		Transferred Out	
Transferred In		Butchered	
		Ending Inventory	
Total Acquisitions		Total Disappearance	

Total acquisition must equal total disappearance.

2. Suggested Teaching Activities and Experiences:

   Explain briefly, using the form suggested in "subject content", what is included in acquisitions and what is included in disappearances. Also show why these two must be equal if all livestock have been correctly entered. Supply each family with a copy of Form F.A. 12. Instruct them to use pencil - not ink - so numbers can be erased when necessary. Have each family transcribe the livestock numbers (marginal totals and monthly records) from the account book pages to Form F.A. 12 and make the appropriate additions in the left hand column. The first livestock check of this kind should be done no later than April 1. When subsequent checks are made, the left hand totals should be erased and new totals should be made to include all months up to the time of the livestock check.

Illustrate how an individual animal or groups of animals can be traced if numbers do not check out correctly. Other dairy cattle may be used for this example. If there were eight two-year olds on the beginning inventory, did some freshen? were some sold? did some die? how many are still on hand? This should be done with each group of animals until the numbers check out. When the Form F.A. 12 is completed it should be kept in the family's folder by the instructor for his use when making thorough account book checks. This form will later be submitted to the analysis center, along with the farm account book.

3. References:

   A. Livestock Reports, Form F.A. 12.

   B. Records for Farm Management.

   C. Minnesota Farm Account Book.

Part III - Suggested On-Farm Instruction Activities

Review livestock entries in the account book. Assist the family in attaining a livestock numbers balance. Be alert to questions on home beautification, fruit and vegetable production and field crops.

UNIT I - IX

THE MID-YEAR FEED CHECK

Teacher Objectives:

1. To teach families the technique of making a mid-year feed check.
2. To assist families in making and adjusting the mid-year feed check.

Part I - How Do you Make a Mid-Year Feed Check?

1. Subject Content:

   A. Purpose of the mid-year feed check

      1) To give greater accuracy to feed records.
      2) To adjust feed records when inventories are at the low point of the year.

   B. Procedure for making the feed check

      1) Inventory farm grown feeds as of June 1. (Another date may be used if desired).
      2) Have feed records completed up to the same date.
      3) Enter totals on "Crop and Feed Check"
      4) Determine the amount "available for feed" in the appropriate space.
      5) Add up the various feeds to livestock in the account book as of the same inventory date.
      6) Transfer feed totals to feed record for each class of livestock.
      7) Add the amount fed to livestock for each feed and compare this with the amount "available for feed".
      8) Study the differences between these figures and determine where errors were most likely.
      9) Make the appropriate adjustments in the proper column on the crop and feed check form to make "total fed" balance with "available for feed".

2. Suggested Teaching Activities and Experiences:

Follow the procedure listed under "subject content". Emphasize that a feed check when inventories are low will add a great deal of accuracy to the feed records and will also make the year-end feed check easier to accomplish.

The next scheduled farm visit after this unit is covered in class should be used to check on the progress of families with the feed check and to assist them with its completion, if necessary. This is probably the first experience of the family with this form or this accounting procedure. This activity not only will promote more accurate feed records, but will also serve as good training for the year-end crop and feed check. Any individual instruction during the year in procedures necessary to keep and close out an accurate farm record will ease the workload of the instructor at the end of the year when his schedule will otherwise be very crowded.

3. References:
   - A. Minnesota Farm Account Book.
   - B. "Crop and Feed Check", included in Minnesota Farm Account Book.

Part II - Suggested On-Farm Instruction Activities

Assist in completing the mid-year crop and feed check. Give instructions for recording the yields of hay, haylage, grass silage, pasture and other crops approaching maturity. Check the progress of the aforementioned crops and the preparations for harvest.

UNIT I - X

CROP YIELD RECORDS

Teacher Objectives:

1. To teach the importance of accurate crop yield records.
2. To teach a technique for determining and recording crop yields.

Part I - Why are Accurate Crop Yields Important?

1. Subject Content:

   A. What are the uses of crop yield records?

      1) To determine production per acre.
      2) To evaluate cropping efficiencies.
      3) To determine available feed.

   B. How does the accuracy of crop yields affect the analysis of the farm business?

      1) An inaccurate estimate of crop yield:
         a) Results in erroneous cost per unit of production.
         b) Results in erroneous amount available for livestock feed and distorts efficiencies of livestock.
         c) Results in erroneous inventories.

2. Suggested Teaching Activities and Experiences:

   Using the information in "subject content", illustrate that crop yield records are used to evaluate the effectiveness of both the crop and livestock program. Without yield records it would not be possible to determine the effectiveness of fertilization, tillage and weed control practices. These records are also used to determine the amount of feed available for livestock. Refer back to material covered in Unit IX to show how an optimistic crop production estimate will make the livestock enterprises appear to be less efficient in the use of feed, while a pessimistic estimate of crop production will have the reverse effect. Illustrate how inaccurate yield estimates will result in inaccurate end-of-the-year inventories and in turn reflect on farm earnings.

3. References:

   A. Profitable Farm Management.

   B. Records for Farm Management.

   C. "Crop and Feed Check", included in the Minnesota Farm Account Book.

   D. Farm Management, Principles, Budgets, Plans.

Part II - How are Crop Production Records Determined and Recorded?

1. Subject Content:

   A. Determining total production

      1) Hay production
         a) Number of bales times average weight per bale.
         b) Number of loads times tons per load.
         c) Cubic feet in storage divided by cubic feet per ton.
      2) Silages
         a) Volume in storage, times weight per cubic foot, divided by 2000 lbs. equals tons.
         b) Refer to tables on back of Minnesota Farm Account Book.
      3) Ear corn
         a) Moisture correction tables
         b) Use tables on back of Minnesota Farm Account Book.
      4) Adjustments for hay and pasture from the same field
         a) Determine percent of annual production harvested as hay.
         b) Total acres of hay and pasture from a given field must not exceed total acres in the field.

2. Suggested Teaching Activities and Experiences:

This teaching unit will furnish background information for calculating the production of all crops. It is very important to record crop production during harvest or immediately upon completion of the harvest. For this reason this unit should be taught before the first crop of hay has been harvested.

Have each family refer to page 29 in the Minnesota Farm Account Book. Acres have been entered previously. (See Unit VI).

Emphasize that total production (column 4) is of importance here. Disregard yield per acre (column 3) at this time.

Use examples to show how total production of hay can be determined by each of the methods shown in the hay production section of "subject content".

Follow the subject content outline, illustrating methods of determining production for each of the crops.

Assistance must be provided on farm visits to get production data recorded in the Minnesota Farm Account Books. The instructor will become aware of the harvesting progress on each of the farms during his monthly farm visits. This phase of accounting should be covered on the farm visit immediately following the harvest of each crop. Since the harvesting of various crops is spread out over a considerable period of time, this will be a part of several farm visits. Constant but tactful reminders are necessary on this phase of the records to encourage accurate and timely entries.

3. References:

   A. Minnesota Farm Account Book.

   B. Profitable Farm Management.

   C. Records for Farm Management.

Part III - Suggested On-Farm Instruction Activities

Assist families in accurately recording total yields of all crops harvested or maturing. Instruct how adjustments are made for moisture, test weight, quality. Examine adequacy of storage facilities and the storage procedures. Demonstrate how to determine harvesting field losses.

UNIT I - XI

THE FOUR YEAR DEPRECIATION SCHEDULE

Teacher Objectives:

1. To determine current inventory values of all depreciable capital assets and to record these values in the Four Year Depreciation Schedule.

2. To determine and record tax-base values of bare land and operator's house.

Part I - How Do You Determine Current Inventory Values of Depreciable Property?

1. Subject Content:

    A. Depreciation schedules from past income tax returns.

    B. Records of farm purchase.

    C. Definition of terms:

        1) Cost.
        2) Additional first year depreciation.
        3) Investment credit.
        4) Salvage value.
        5) Years life.
        6) Annual depreciation.
        7) Depreciation charges this year.

    D. Capital asset groups
        1) Truck and auto.
        2) Mechanical power and general machinery.
        3) Livestock equipment.
        4) Bare land.
        5) Operator's house.
        6) Buildings, fencing, tiling.

2. Suggested Teaching Activities and Experiences:

Families should have been instructed to bring along to class copies of depreciation schedules submitted as part of the income tax returns. The most recent year is most necessary but it is helpful to have as many past years depreciation schedules as possible. For farm owners it is also necessary to have the depreciation schedule for the year in which the farm was purchased or some other source of information related to the allocation of the farm cost to buildings, fences, tiling, bare land and operator's house.

Use examples to show how "cost remaining beginning of year" can be determined for the beginning of the first analysis year. Show how depreciation is subtracted to easily arrive at end of year value (beginning of next year).

Have each family begin making entries in the four year depreciation schedule. Check individually with each family to see if the proper procedure is being used. Repeat examples of calculating procedures, if necessary.

Point out how to make a memory check of machinery and equipment, section by section, in the depreciation schedule to help families determine if items purchased over the years have been omitted from the depreciation schedule.

It would be well to have all families turn in their completed depreciation schedule along with tax schedules at the next class meeting so each can be carefully checked by the instructor.

3. References:

   A. Minnesota Farm Account Book.

   B. Internal Revenue Service, "Guidelines for Depreciation Schedules"

   C. Farmers Tax Guide.

   D. Income Tax Management for Farms.

Part II - Suggested On-Farm Instruction Activities

Review the procedures for entering items in the depreciation schedule. If not already complete, assist in completing the beginning of year entries from income tax records. Illustrate how new or traded items are entered on the depreciation schedule. Show how the depreciation schedule can be used to arrive at the annual cost of ownership.

UNIT I - XII

INCOME TAX MANAGEMENT

Teacher Objectives:

1. To teach the value of managing income to minimize taxes.

2. To teach a procedure for and encourage the making of an income tax estimate.

Part I - How Can Income Taxes Be Held to a Minimum?

1. Subject Content:

   A. Effect of income fluctuation on income tax

      1) Greater fluctuation from year to year results in greater taxes.
         a) Attempt to maintain income that will at least equal deductions and exemptions.
         b) Example:

INCOME AND INCOME TAX LIABILITY FOR TWO FARMERS

	First Year	Second Year	Average Income	2-Year Tax
Jones Family 2 Children - Net Income	$ 0	$7,800	$3,900	$671
Smith Family 2 Children - Net Income	3,900	3,900	3,900	64

      2) Increasing deductions to save tax.
      3) Tax management of sales or trades.
      4) Tax reporting reminders.
      5) Tax Management tips.

2. Suggested Teaching Activities and Experiences:

The reference cited for this teaching unit is very complete and well organized. It can be followed very closely and used as the entire teaching material for this income tax management class. For this reason, the material under "subject content" has been held to a minimum. If copies of this reference, "Income Tax Management for Farmers" are not available in quantities, the instructor should prepare a summary of the important points and provide duplicated copies for the class members. This material can then be followed by the class while the instructor explains the points and enlarges on the examples used. If class discussion is encouraged, this procedure will be both interesting and worthwhile.

3. References:

   A. Income Tax Management for Farmers.

Part II - How Can Taxable Income be Estimated Before the End of the Year?

1. Subject Content:

   A. Income Tax Estimate Worksheet from page 12 of reference.

2. Suggested Teaching Activities and Experiences:

This class should be held in late October or early November to allow time for adjustment in purchases or sales which may help to minimize taxes. Have each family list up-to-date totals from the Minnesota Farm Account Book on the income tax estimate sheet. Suggest that they refer to inventories on hand as a guide to determine possible receipts and expenses for the remainder of the year. Have them estimate tax obligation on the basis of this estimated income.

The instructor may prefer to revise the income tax estimate worksheet to conform to the categories on Form F.M. 7. This can be done very simply by adding a column for estimating the rest of the year and another for the estimated year's total.

After each family has calculated the estimated income tax, the consequences of delaying sales or making advanced purchases should be thoroughly discussed. It should be emphasized that the amount of income taxes paid over a period of years is the determining factor. Any adjustments that are to be made must be in line with sound farm management practices if savings are to result.

3. References:
   - A. Income Tax Management for Farmers.
   - B. Form F.M. 7.
   - C. Minnesota Farm Account Book.

Part III - Suggested On-Farm Instruction Activities

Assist families in completing an estimate of their income tax liability. Discuss with them adjustments that could be made in delayed sales or early purchases to affect income level and final tax liability.

UNIT I - XIII

MAKING THE END OF THE YEAR INVENTORY

Teacher Objectives:

1. To teach the technique of making and recording inventories at the end of the year.

Part I - How Do You Complete the Year-End Inventories?

1. Subject Content:

   A. Values to be used

      1) Same general price level as beginning inventory for breeding stock.
      2) Conservative but realistic values.
      3) Current market price for market livestock.
      4) Current market price for forages.
      5) Purchase price for carry-over feeds.

   B. Order in which to complete inventories
      1) Dairy cows.
      2) Other dairy cattle.
      3) Beef breeding cattle.
      4) Feeders.
      5) Hogs.
      6) Sheep.
      7) Horses.
      8) Chickens.
      9) Crop, seed and feed.
      10) Items in "Five Year Depreciation Schedule".
         a) Set up depreciable items purchased during the year from page 42. Indicate page and line used.
         b) Auto and truck.
         c) Mechanical power.
         d) Crop and general machinery.
         e) Livestock equipment.
         f) Buildings, fencing, tiling.
         g) Bare land.
         h) Operator's house.
      11) Non-farm assets.
      12) Liabilities.

   C. Special items to check
      1) Heifers freshened - value, page 5, column 3. should agree with end-of-the-year value of the same animals.
      2) Make certain that no beginning of year value appears in depreciation schedule for items bought during the year.
      3) Beginning value minus depreciation equals ending value on depreciable items.

2. Suggested Teaching Activities and Experiences:

Material from several preceeding teaching units may be reviewed briefly with the class before going into the ending inventories. Unit IV, making the inventory, is a very similar unit. The same procedure of using the Financial Summaries Form from the account book should be followed to furnish a method of keeping track of inventory completions. Unit IX, "Making the Mid-Year Feed Check" may furnish ideas on the crop, seed and feed inventory. Each record-keeper has completed two previous feed inventories. If these have been carefully checked, no great problem will be encountered with this one. Unit X, "Crop Yield Records", will also be useful in determining quantities of grains and forages. Special attention should be called to the year-end inventory of liabilities. This should include all money owed at the end of the year, whether it is long-term, short-term, or unpaid bills and accounts. The accuracy of all inventories, including quantities, weights and values, should again be stressed. This is such an important point that it must be stressed at every opportunity throughout the year.

3. References:

   A. Minnesota Farm Account Book.
   B. "Financial Summaries", included in Minnesota Farm Account Book.
   C. Records for Farm Management.
   D. Farm Records.
   E. Current local newspapers and market reports.

Part II - Suggested On-Farm Instruction Activities.

Assist in making a complete year-end inventory. Special attention should be paid to balancing the money borrowed - paid on debts, - inventory of liability section. Illustrate how the livestock reports and crop and feed check can be used to help issue record accuracy. A final check on yield records and crop inventories should be made to insure that consideration for moisture, test weight and quality has been given.

UNIT I - XIV

END OF THE YEAR CROP AND FEED CHECK

Teacher Objectives:

1. To teach the technique of completing the crop and feed check and adjusting feed records.

Part I - How Do You Balance Feed Supply and Disappearance for greatest Accuracy?

1. Subject Content:

   A. Items which must be completed prior to this unit

      1) Beginning inventories.
      2) Crop production records.
      3) Mathematical addition of purchased feeds.
      4) Mathematical addition of crops sold.
      5) Ending inventories on crops and feed.
      6) Feed records by enterprise.

   B. Procedure for completing crop and feed check.
      1) Enter purchases, amount and value, by individual feeds on Crop and Feed Check form (provided with account book).
      2) Enter beginning inventory, amount and value by individual feeds on Crop and Feed Check form.
      3) Enter crops raised on Crop and Feed Check form.
      4) Add the items entered to get total supply on the Crop and Feed Check form.
      5) Enter crop sales on Crop and Feed Check form.
      6) Enter crops seeded on Crop and Feed Check form.
      7) Enter ending inventories on Crop and Feed Check form.
      8) Add the last three items and subtract this sum from the total supply. Enter this remainder on the appropriate line on the Crop and Feed Check form.
      9) Enter amounts of each feed fed from the feed records on page 26-27 of the account book in the appropriate place for each class of livestock.
      10) Add up the individual feeds fed to all classes of livestock.
      11) See if the amount "available for feed" corresponds with the total amount "fed".
      12) If these are not the same, study the differences to determine where the error was most likely to occur.
      13) Make adjustments in feed to the various classes of livestock in the appropriate column.
          a) In rare cases it may be necessary to adjust the raised or ending inventory. This should not be done unless there is complete assurance that amounts fed are entirely reliable.

2. Suggested Teaching Activities and Experiences:

Have each family follow the procedure listed under "subject content". Stress that any figure which is put on the Crop and Feed Check form must be taken from the account book. The purpose of this rule is to check on the accuracy of entries in the account book.

This unit will furnish each family with the information necessary for completing the crop and feed check. However, the instructor should work with each family individually on a farm visit scheduled for this purpose. In all probability, each family will desire assistance; especially in adjusting the amounts fed to livestock.

3. References:

A. Minnesota Farm Account Book.

B. "Crop and Feed Check Form", included in Minnesota Farm Account Book.

C. Records for Farm Management.

Part II - Suggested On-Farm Instruction Activities.

Begin by assisting with the completion of the crop and feed check. Illustrate how this information is used in determining livestock efficiencies. Ask families to make another estimate of the production levels and efficiency of their livestock operations. Encourage them to record them with their previous estimate.

UNIT I - XV

CLOSING THE ACCOUNT BOOK FOR ANALYSIS

Teacher Objectives:

1. To familiarize families with the necessary preparations for closing the Minnesota Farm Account Book for analysis.
2. To familiarize families with the necessary closeout forms and encourage their early completion.

Part I - How Do You Close the Year's Record?

1. Subject Content:

   A. Necessary prerequisites to closing the account book for analysis.

      1) End-of-the-year inventories.
      2) Crop and feed check.
      3) Livestock Report, F.A. 12.
      4) Checklist for closing the Minnesota Farm Account Book.

   B. Closing Procedure:

      1) The checklist for closing the Minnesota Farm Account Book has been designed to cover both major and minor points in closeout. If this form is followed and other forms suggested in it are completed, the closeout will be accomplished. This checklist and the closeout forms should be the subject matter for this unit.

2. Suggested Teaching Activities and Experiences:

   Supply each family with a copy of the checklist for closing the Minnesota Farm Account Book and the closeout forms commonly referred to as the Livestock Report, Crop and Feed Check and Supplementary Information form. Have each family follow this checklist as they check their accounts for completeness and accuracy. Have each family fill out Form F.A. 51, Supplementary Information. Considerable work will be necessary with each family on a farm visit following this unit of instruction. On this visit the account book will be checked for accuracy and completeness, as suggested in this unit. Livestock Report, F.A. 12, Crop and Feed Check, and Supplementary Information, F.A. 51 (Voc.Ag.) will also be checked for completeness and accuracy. The Minnesota Farm Account Book, including the Four Year Depreciation Schedule and these three forms, at this time, are ready to be forwarded to the Analysis Center.

3. References:
    - A. Checklist for Closing the Minnesota Farm Account Book.
    - B. Supplementary Information, F.A. 51.
    - C. Minnesota Farm Account Book.
    - D. Livestock Report, F.A. 12.
    - E. Crop and Feed Check.

Part II - Suggested On-Farm Instruction Activities.

The final closing sessions should be devoted to attaining the highest degree of accuracy possible with the farm account. Follow a step by step procedure of closeout to insure that no important information is overlooked. The final close out should include the completion of Checklist for Closing the Minnesota Farm Account Book, the Crop and Feed Check, the Livestock Report (F.A.12), and Supplementary Information form (F.A. 51). It would also be desirable to complete a cash check as a measure of record accuracy.

Agriculture Department
Faribault Area Vocational-Technical School
10-200-67

Name ______________________________

Date ______________________________

Checklist for Closing the Minnesota Farm Account Book

"Closing" the Minnesota Farm Account book is the term that is used in making the final entries in the book at the end of the year in preparation for a farm business analysis. In addition to the "closed" account book three forms are completed and sent to the analysis center. These are the "Crop and Feed Check"; the "Livestock Report", F.A. 12; and the "Supplementary Information", F.A. 51. These forms are used to check on the completeness and accuracy of various sections of the records. Care should be taken that all figures used on these forms are taken directly and exactly from the farm account book. If this is not done, the forms do not serve the purpose of promoting accuracy. Also, make CERTAIN that beginning inventories of all items - Livestock Feed and Non Farm Assets - are exactly the same. as the ending from last year. If a change has been made, please explain.

It is not a difficult job to "close" the Minnesota Farm Account Book, but it does take time. The main deficiency is not usually incorrect entires, but rather missing items. For this reason, the following checklist has been prepared to help you check on the completeness of your book.

Read each of the items on the checklist as you are going through your account book. If you have the page or item complete, place a check (X) in that blank space. If the item does not apply to your business, place a zero (0) in the blank space. For example: if you don't have dairy cows, place a zero in pages 2-3, 4-5, 6-7, 8-9. When you have every blank space filled, these items should be complete. Since this list only includes the most frequently missed items, you, of course, should complete any other items in the book that are obvious.

Pages 2-3 -- Dairy

Have you entered:

_______ Milk used in home - Cols. 2-3?

_______ Milk fed to calves - Cols. 4-5?

_______ Amount (Cols. 8 & 10) and value before any deductions (Col. 11) of milk sold?

_______ Landlord's share of milk sold (Col. 13)?

_______ Have you entered hauling expense and other deductions (Col. 14, page 2 through Col. 12, page 3) for each pay period of the year?

Pages 4-5 -- Dairy

_______ Number, weight and value of all COWS butchered?

_______ Does item 1, Col. 7, page 4, agree with Col. 8 total, page 5?

_______ Does Col. 18 total, page 4, agree with Col. 13 total, page 5?

_______ Number and value for heifers freshened, Col. 2-3, page 5?

_______ Number, WEIGHT, and value for transferred, Col. 4-5-6, page 5?

____ Dates, number and value of cows bought.

____ Dates, number and value of cows sold.

____ Number, total value, operator's and landlord's share beginning inventory of Dairy Cows.

____ Number, total value, operator's and landlord's share end of year inventory of Dairy Cows.

Pages 6-7 -- Dairy

These pages are for your personal record of individual cows. Have you transferred these TOTALS to page 5? ____

Pages 8-9 -- Other Dairy

____ Number, weight and value of other dairy (NOT COWS) butchered, Cols. 3-5.

____ Heifers fresh, number and value (Cols. 7-8). Does this agree with Cols. 2-3, page 5?

____ Transferred to feeders NUMBER, WEIGHT, and value, Cols. 9-11.

____ Do Cols. 13 (page 8) + 16 (page 9) + calves born (Line 3, page 9) = Cols. 22 (page 9) + 7 (page 8) + 9 (page 8) + calves died (Line 8, page9) + others died (Line 9, page 9) + 3 (page 8)?

Pages 10-11 -- Beef Breeding

____ Are all entries complete with Number, Weight and Value?

Pages 12-13-14-15 -- Feeders

____ Do you have number, weight and value for all entries?

Pages 16-17 -- Hogs

____ Cols. 1-5, hogs butchered - number, live weight and value.

____ Col. 18, number farrowing each month.

____ Col. 19, number born each month.

____ Col. 20, number died each month (except breeding stock over 6 months of age).

____ Cols. 7-9, number, weight and value of hogs on beginning inventory.

____ Cols. 12-14, number, weight and value of hogs on ending inventory.

____ Cols. 36, 37, 39, number, WEIGHT and value of pigs bought.

____ Are breeding hogs sold shown in cols. 3-6 (including number, weight and value)?

____ Are market hogs sold shown in Cols. 11-14 (including number, live weight and value)?

Pages 18-19 -- Sheep

_____ Are cols. 13-14-15-, page 18, complete?

_____ Are inventories complete with weights and values?

_____ Pounds of wool sold, col. 24, page 19.

Pages 20-21 -- Chickens

_____ Number and value of birds on beginning and ending inventories.

_____ Hens butchered, (Cols. 13-14-15).

_____ Other chickens butchered (Cols. 16-17-18).

_____ Eggs used (Cols. 19-20).

_____ Chickens sold, Number and value, (Cols. 16-20).

_____ Do you have dozens indicated for all egg sales?

Pages 24-25 -- Misc. Livestock Expense

_____ Have subtotals been carried over from page 3?

_____ Are Livestock Enterprises identified on top of Sections?

_____ Are veterinary expenses clearly identified?

Pages 26-27 -- Feed Records

_____ Have you entered number of head on pasture and days on pasture according to per cent of roughage from pasture?

_____ Are all farm grown feeds allocated to livestock in the proper columns?

Page 28 -- Crops

_____ Crops used in house, description and VALUE.

Page 29 -- Crop Data

_____ Does col. 2 add up to be the owned acres in your farm?

_____ Does col. 8 add up to be the acres rented?

_____ Is total production shown in col. 4?

_____ Is total production including Landlord's share shown in col. 10?

Hay in tons ___ Corn Silage in tons ____ Corn and Small Grains in bushesl___
Canning Crops in dollars ____ Diverted Acres in dollars _____

Pages 30-31 -- Crop Inventories

_____ Are amounts and values shown for each item for both beginning and end of year (including undivided share of landlord)?

_____ Are commercial feeds on inventory identified for enterprise: That is Dairy; Other Dairy; Hogs, Beef Breeding, Beef Feeders, etc?

Pages 32-36 -- Feed Bought

_____ Are amounts and values of feed bought shown for each entry?

_____ Is cost of commercial feeds amount and value shown separately from farm grains?

_____ Is the cost of grinding and other feed processing subtracted and recorded under custom work hired (page 40)?

_____ Are feeds for various enterprises separated and identified?

_____ Are column totals from pages 32-36 carried to the proper place on the bottom of columns 68 to 70?

Page 37 -- Crops Sold

_____ Is each crop sold identified and quantity--hay in tons, corn and grain in bushels--given as well as total value?

_____ Are diverted acre payments for both operator and landlord shown in the designated place?

Pages 38-39 -- Crop Expenses

_____ Are fertilizers, crop chemicals and other crop expenses each put in the designated place in the book?

_____ Do Cols. 8 + 9 + 10 + 11 + 12 + 13 = 5?

_____ Do Cols. 21 + 22 + 23 + 24 + 25 + 26 = 18?

Page 40 -- Custom Work Hired

_____ Is each job clearly identified?

_____ Do Cols. 6 + 7 + 8 + 9 + 10 + 11 + 12 = Col. 3?

Page 41 -- Repairs

_____ Are only livestock equipment and R. E. repairs on this page? (Supplies go on pages 24-25).

_____ Are landlord's estimated R.E. repairs entered?

Page 42 -- Machinery Equipment and R.E. Bought

_____ Is every depreciable item purchased during the year listed here?

Page 44-45 -- Gas, Oil and Grease

_____ Is Federal gas tax credit taken on last year's tax shown as 1967 income in Col. 3?

_____ Are all items listed in total value and also under Tractor and Machinery, Truck or Auto?

_____ Are gallons of gasoline shown for all purchases?

_____ Do Cols. 37 + 39 + 41 = Col. 33 ?

Pages 46-49 -- Repair

_____ Are all items shown in total value and again in Tractor, Machinery, Truck or Auto?

_____ Do Cols. 22 + 23 + 24 = 19? (page 47)

Pages 50-51 -- Wages

_____ Are days or months worked clearly shown?

Page 51 -- Unpaid Labor

_____ Have you shown days of unpaid labor in Col. 30?

_____ Days of labor boarded in Col. 31?

Page 51 -- Taxes

_____ Have you shown Landlord's R.E. and P.P. taxes?

Page 52-53 -- Miscellaneous

_____ Is insurance clearly identified?

_____ Have you shown % or dollars of teleppone and electricity for farm business?

_____ Have you clearly identified job done in work off farm?

_____ For Coop refunds have you shown total value and cost and equity?

_____ Have you deducted personal share of refunds (no provision in the book for this).

Page 54-55 -- Borrowed-Debts-Assets

_____ Does Col. 13 + 3 = 4 + 10?

_____ Does Col. 14 show everything that you owe to everyone as of December 31st?

_____ Are both beginning and ending non-farm assets complete? (Col. 2 + 3, 5 & 6) page 55.

_____ Are all life insurance premiums paid during the year in Col. 13?

Page 56 -- Non-farm Income Taxes

____ Are income taxes, Federal, Social Security and State paid this year shown separately in Col. 7?

____ Are refunds shown in Col. 10?

Pages 57-62--- Personal

____ Are drugs shown separately from other medical expenses? (page 57)

Yes ___ No ___ Are your personal spending accounts fairly complete?

Four Year Depreciation Schedule

____ Have you entered depreciation charges this year for every item and subtracted it from the beginning value to get ending value?

____ Has every item purchased on page 42 been entered in your depreciation schedule?

____ Have you entered bare land value for your land and rented land?

____ Have you estimated the value and depreciation of landlord's building?

Yes ___ No ___ Would you be willing to keep more detailed accounts if the analysis would give you more information?

What additional information would you like your analysis to give you?

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CHAPTER VI

FARM BUSINESS MANAGEMENT II

Because Management Education is a continuing program, there is no natural break between Farm Management I and Farm Management II. The second year of instruction may be called "Farm Business Analysis", or any other appropriate title. The program of instruction begins in January and continues through December with particular emphasis on the interpretation of the first year's analysis. The first two or three teaching units deal with income tax calculation and other background information. The analysis interpretation itself will begin in March or April depending on when the farm business analysis for the past year's record has been returned from the area analysis center. If the complete analysis summary is not yet available, the March meeting can well be based on general information obtained from the individual preliminary reports of cooperators. At this time, all or most of the families have received their perliminary reports and are eager for guidance to begin study of their first complete analysis of their farm business.

The subject matter of many of the lessons in Farm Management II are examples of the application of sound management and economic principles. While the principles are often not explicitly identified, the instructor should be alert to the opportunity to explain the nature of the principle to his farm families, and to name and identify the principles with which the unit is concerned.

UNIT II - I

CALCULATING INCOME AND SOCIAL SECURITY TAXES

Teacher Objectives:

1. To teach families how to calculate "net farm income" using Form 1040, Schedule F.
2. To teach families how to calculate "capital gains income" using Form 1040, Schedule D.
3. To teach families how to determine Federal Income Tax using Form 1040.
4. To teach families how to determine Minnesota Income Tax due using Form M-I.

Part I - How Do You Determine New Farm Profit?

1. Subject Content:

    A. Why should farm management groups study the income tax procedures?

    1) Obligation for all farmers to keep accurate records and to pay the proper taxes to support state and federal government.
    2) Farm families need to know how income taxes and social security are computed in order to properly manage their tax liabilities.
    3) Income taxes are a large item of expense. As with other expense items, controlling this large item may leave more money available to meet family goals.

    B. Completing Form 1040, Schedule F.

    1) Transfer of income totals from account book to appropriate space on Schedule F.
    2) Transfer of expense totals from account book to appropriate space on Schedule F.
    3) Completion of Depreciation Schedule worksheet and transferring totals to Schedule F.
    4) Determining "net farm income" for tax and social security purposes.

2. Suggested Teaching Activities and Experiences:

An example farm account or an actual farm record should be used in class to illustrate how easy it is to transfer income, expenses and depreciation totals onto Form 1040, Schedule F. The completion of the family's actual tax return should not be attempted in class because of the confidential nature of the information. A farm visit should be scheduled with each family to work individually with them on their income tax reporting. This and final closeout of the account book can well be accomplished during one visit. A packet of all forms needed for computing tax liability should be supplied to each family. The forms may then be used by class members to follow the discussion and to make notes that will be helpful in doing their own tax return.

A supplemental depreciation worksheet which follows the format of the "Four Year Depreciation Schedule" should be used to aid in the calculation and reporting of depreciation. Special points should be made during the discussion on entering newly purchased depreciable items in the "Four Year Depreciation Schedule" and bringing it up to date on old items.

When explanation and discussion of the Form 1040, Schedule F, has been completed a few minutes should be spent on the completion of Schedule 1040 F-I including the calculation of Social Security Tax due.

Part II - How Do You Determine Capital Gains Income?

1. Subject Content:

    A. Completing Form 1040, Schedule D.

        1) Completing short term capital gains.
            a) Breeding livestock held less than 12 months.

        2) Completing long-term capital gains.
            a) Breeding livestock held more than 12 months.

3) Completing gains from Section 1245 and 1250 Property.
   a) Depreciable assets held more than 6 months.
4) Completing gains other than capital assets.
   a) Section 1245 and 1250 Property Losses.
5) Determining total gains and losses from sale or exchange of property.

2. Suggested Teaching Activities and Experiences:

Use Form 1040, Schedule D to illustrate how breeding livestock, machinery and equipment, and other property is treated for tax purposes.

It is important that students learn to recognize gains and losses that fall into the capital gains tax category as contrasted to ordinary income. Stress the importance of following tax forms to the "letter" to arrive at the correct taxable income.

Part III - How Do You Determine Your Federal Income Tax Liability?

1. Subject Content:

A. Completing Federal Form 1040.

1) Determining adjusted gross income.
2) Determining exemptions.
3) Determining non-business deductions.
4) Determining tax credits.
5) Determining tax from table or schedule.
   a) Determining surcharge.
6) Determining balance due with the return.

2. Suggested Teaching Activities and Experiences:

The adjusted gross income is determined by combining on Form 1040 the "net farm profit" from Part I, the capital gains income from Part II, and other miscellaneous income that may not require a separate schedule. Point out that anyone can file their own income taxes if willing to read and follow directions.

With the step by step approach as suggested under "subject content", the determination of tax due is relatively simple.

Special forms may be used to help families determine their tentative Investment Credit for the current year and to help them to keep track of Investment Credit used, carried over, accumulated and paid back. Without a special system to keep record of this, there is likely to be much confusion in future years. A checklist of forms and schedules to be filed by the family will prove helpful. (See 1968 Income Tax-Final Reminders). Even though some families may prefer to have an attorney or tax consultant fill out returns and send them in, this exercise should be encouraged. The family will learn more about its own tax problems and, in all probability, will have a more complete return if it is done in this way prior to going to the tax consultant.

Part IV - How Do You Determine Minnesota Income Tax Due?

1. Subject Content:
    A. Completing Minnesota Form M-I.
2. Suggested Teaching Activities and Experiences:

    Determination of Minnesota Income Tax liability is a simple matter after the Federal Tax forms have been completed. Simply referring to the proper table or schedule and carrying forward onto the form will determine the tax due.

3. References for Parts I, II, III and IV.
    A. Tax Forms: U.S. 1040, 1040F, 1040F-1, Schedule D, Form 3468, Form 4136, Minnesota Form M-1.
    B. Farmer's Tax Guide.
    C. Your Federal Income Tax, Edition for Individuals.
    D. Summary of Income Tax Short Course.

Part V - Suggested On-Farm Instruction Activities.

Some families may ask for assistance in completing their income tax reporting forms. This visit may be used for verifying the information which they have reported on their tax forms and for checking to see that entries have been made correctly. This exercise provides an excellent opportunity for discussing tax planning for the next tax year. Instructors may find it useful to assist families in preparing their own tax forms for the first time even if the family employs a tax consultant to do the final tax filing.

Faribault Area Vocational-Technical School
Agriculture Department

Name ____________________

INCOME TAX SUPPLEMENTARY WORKSHEET 19___ *
FOR DEPRECIABLE ASSETS SUBJECT TO INVESTMENT CREDIT

Item	New Used	Trade-In Value	Difference Paid	Adjusted Cost	Additional first year	Investment Credit	Date acquired	Adjusted Basis	Useful life	Annual Depreciation	Depreciation this year	Remaining Value

Use a separate form for each year's record. File with your tax records.

Faribault Area Vocational-Technical School
Form 11-66-200-I.C.

Name____________________

CUMULATIVE RECORD OF INVESTMENT CREDIT*, 1962-1976

Year	Tentative I.C.**	Current I.C. Used	Current I.C. Carryover	Carryover I.C. Used	Unused I.C. Expired	I. C. Payback***	I. C. Carryback	Accumulated I.C. Carryover	Explanation
1962					XX				
1963					XX				
1964					XX				
1965					XX				
1966					XX				
1967									
1968									
1969									
1970									
1971									
1972									
1973									
1974									
1975									
1976									

*Keep this cumulative record with your most recent income tax record.

**Used for Minnesota Income Tax.

***Called Recapture by Internal Revenue.

Faribault Agriculture Department
11-68-150

1968 Income Tax - Final Reminders

For Federal Income Tax, the following forms should be completed:

Form 1040: U.S. Individual Income Tax Return (for anyone filing Federal Income Tax)
Schedule F (Form 1040): Schedule of Farm Income and Expenses (for all farmers)
and Supplemental Depreciation Form
Schedule F-1 (Form 1040): Self Employment Tax (Social Security for Farmers) (The 1968 rate is 6.4%; maximum $499.20)
Schedule D (Form 1040): Gains and Losses from Sales or Exchanges of Property
Form 3468: Computation of Investment Credit
Form 4136: Computation of Credit - Gas and Oil Tax
Schedule C (Form 1040): Profit (or loss) from Business or Profession (Needed if you or your spouse have self-employed sideline business other than farming)
Schedule C-3 (Form 1040): Computation of Social Security Self-Employment Tax (Needed for spouse if she has self-employing business with earnings over $400)
Schedule B (Form 1040): Supplemental Schedule of Income and Retirement Income Credit
Schedule G (Form 1040): Income Averaging (if you income average)

The above forms* along with a check covering the amount of your Income Tax and Social Security made payable to "Internal Revenue Service" should be mailed to:

Internal Revenue Service Center
2306 E. Bannister Road
Kansas City, Missouri 64170

(Also Form W-2, if you or your spouse worked for wages.

##########

For State Income Tax, the following forms should be completed:

Form M-1: Minnesota Individual Tax Return
Schedule F (Form 1040): Schedule of Farm Income and Expenses
and Supplemental Depreciation Form
Form 1040: They would like a copy of Form 1040 marked "STATE COPY"

Possibly Schedule "B", "C", AND "D", if substantial amounts are involved.

The above forms* and a check payable to "Commissioner of Taxation" should be mailed to:
Minnesota Department of Taxation
Income Tax Division
Centennial Office Building
St. Paul, Minnesota 55101

*Also Form MW-2, if you worked for wages.

##########

To keep for your own records, you should have the following forms: 1040, 1040-F, Schedule F-1, Schedules "B", "D", "G", Forms 3468, 4136, M-1, and if needed, Schedule "C", C-3, W-2, and MW-2.

UNIT II - II

MEASURES OF FARM PROFITS

Teacher Objectives:

1. To acquaint families with the various methods of measuring farm profits.
2. To acquaint families with the various terms used in the analysis reports.

Part I - How Do We Measure Our Progress?

1. Subject Content:

   A. Definitions related to a farm business analysis.

      1) Total Farm Capital - The value of real estate (including land and buildings), livestock, machinery, and equipment, feed and supplies.
         a) Average Farm Capital $= \frac{\text{Beginning Inventory + Ending Inventory}}{2}$
         b) Uses
            (1) A measure of farm business size.
            (2) Working capital which must yield a reasonable return.
            (3) Net worth determination (operators share).
      2) Total Farm Sales - The sum of all cash sales including breeding livestock, market livestock, livestock products, crops, refunds, work off farm and miscellaneous farm income.
      3) Adjusted Total Farm Sales - Total farm sales less capital assets sold.
      4) Total Farm Receipts - Total farm sales plus increase in farm capital and family living from the farm. Family living from the farm is often called perquisites. (Value of house rent is sometimes included, but not in the Minnesota Vo-Ag analysis report.)
      5) Total Cash Operating Expense - (Whole Farm) - All ordinary cash operating expenses except interest paid and cash rent paid.
      6) Total Farm Purchases - Cash operating expense plus capital improvements bought.
      7) Total Farm Expense - Total farm purchases plus decrease in farm capital, interest on farm capital, unpaid family labor, labor charge for partners and board for hired labor.
      8) Labor Earnings - Total Farm Receipts minus Total Farm Expense.

         Labor earnings are what a farmer receives for his year's work after all farm business expenses, unpaid family labor and interest on the capital invested have been deducted from the farm receipts. Since interest on farm capital is charged as an expense and actual interest paid is not considered, the farmer with a large indebtedness can be compared equally with one who has no debts.

9) Labor Income - This measure is just like labor earnings except that perquisites are not counted as part of the farm receipts.
10) Farm Income - Income from capital and operator's labor (cash receipts and increase in inventory, less cash expenses and unpaid family labor). This is what is left to pay for the farmer's time and for the use of invested capital.
11) Returns and Net Increases - Net production for the year.
12) Expenses and Net Decreases - Net costs for the year.
13) Farmers Net Worth - Total assets minus total liabilities.
14) Ratio of Farm Expense to Farm Receipts - Shows how much of each dollar of income is an expense.
    a) Total Farm Expense
       Total Farm Receipts = Ratio
15) Ratio of Assets to Liabilities - Shows how much is owed for each dollar of property.
    a) Total Assets
       Total Liabilities = Ratio
16) Net Cash Operating Income - Adjusted total farm sales minus total cash farm operating expense.
17) Labor Earnings (operator's share) - Total farm receipts minus total farm expense (including interest paid, cash rent, and adjusted interest on farm capital).
18) Return to Capital and Family Labor - Labor earnings + interest on farm capital + unpaid family labor. This *is the amount the family has to* live on, reduce debts and save.
19) Index of Yield - Index of Return - The term index is an expression to show how this item compares with the average of the group. The average is assigned an index value of 100.
20) Supplemental Costs - Crops.
    a) Fertilizer.
    b) Chemicals.
    c) Seed and Other.
    d) Hired Labor (special).
    e) Custom Work.
21) Allocated Costs - Crops.
    a) Power and Crop Machinery Expense.
    b) Land Cost.
    c) Miscellaneous Cost.
22) Supplemental Costs - Livestock.
    a) Miscellaneous Livestock Expense.
    b) Veterinary Expense.
    c) Custom Work.
23) Return Over Feed - Returns and net increases minus value of feed fed.

24) Return for \$100 Feed Fed -

   a) $$\frac{\text{Returns and Net Increases}}{\text{Value of Feed Fed}} \text{ X } 100 = \text{Return for \$100 Feed.}$$

25) Labor Earnings Per Man -

   a) $$\frac{\text{Labor Earnings + Labor (Tbl.3,L 31,32)}}{\text{Number of Workers}} = \text{Labor Earnings Per Man.}$$

26) Per Cent Return On Investment

   a) $$\frac{\text{Farm Income Minus Value of Operator's Time}}{\text{Average Farm Capital}} = \text{\% Return}$$

27) Return Above All Costs (Also referred to as the return to management or profit).

   a) Labor Earnings Minus Value of Operator's Time = Return Above All Costs.

28) Returns Per Hour of Labor -

   a) $$\frac{\text{Labor Earnings + Unpaid Labor}}{\text{Work Units X 10}} = \text{Returns Per Hour.}$$

B. Calculating Measures of Farm Profit

1) Supplementary Data

   a) The following information was taken from a farmer's 1968 records. Various receipts and expenses have been grouped to simplify the calculations:

A SOUTHERN MINNESOTA RECORD OF BUSINESS

Farm Capital

	January 1	December 31
Productive Livestock	$16,979	$16,624
Crop, Seed and Feed	10,929	9,722
Power Machinery and Equipment	10,553	11,818
Land	12,000	12,000
Buildings, Fences, etc.	17,737	27,277
Total Farm Capital	$68,198	$77,441

****

Total Size of Business in Work Units	592
Number of Workers	1.3

****

Farm Sales

Livestock & Livestock Products Sold	$29,392
Crops Sold & Diverted Acres	4,443
Capital Assets Sold	None
Miscellaneous Farm Income	946
Total Farm Sales	$34,781
Increase in Farm Capital	$ 9,243
Family Living From the Farm	234
Assumed Value of Operator's Labor	4,800

Farm Expenses

Livestock Bought & Misc.	$ 1,468
Feed and Crop Expense	12,175
Repairs, Gas, Oil & Grease	1,425
Wages, Taxes, General Exp.	2,295
Utilities	533
Total	$17,896
Capital Assets Bought	14,149
Unpaid Family Labor	$ 400
Board for Hired Labor	350
Interest Paid	825
Labor (Table 3-Line 31)	1,750
Labor (Table 3-Line 32)	None

****

Calculating Common Measures of Farm Profit

1. (68,198) Beginning Inventory + (77,441) Ending Inventory = (145,639) / 2 = (72,820) Average Farm Capital

2.

Total Farm Sales	(34,781)	Total Farm Purchases	(32,045)
Increase in Farm Capital	(9,243)	Interest on Farm Capital	(3,641)
Family Living from Farm	(234)	Unpaid Family Labor	(400)
TOTAL FARM RECEIPTS	(44,258)	Board for Hired Labor	(350)
		TOTAL FARM EXPENSE	(36,436)

TOTAL FARM RECEIPTS (44,258) - TOTAL FARM EXPENSE (36,436) = LABOR EARNINGS (7,822)

3. LABOR EARNINGS (7,822) - PERQUISITES (234) = LABOR INCOME (7,588).

4. (7,588) Labor Income + (3,641) Interest on Farm Capital = (11,229) Farm Income.

5. (34,781) Total Adjusted Farm Sales (Operator's Share) - (18,721) Total Cash Operating Expense (Cash Exp.+ Interest Paid) = (16,060) Net Cash Operating Income.

6.

Labor Earnings (Operator's Share)	(7,822)
Interest on Farm Capital	(2,816)
Unpaid Family Labor	(400)
RETURN TO CAPITAL AND LABOR	(11,038)

7. $$\frac{\text{Labor Earnings + Labor (Tbl.3,L 31,32)(9,572)}}{\text{Number of Workers (1.3)}} = \underline{(7{,}363)} \text{ Labor Earnings Per Man.}$$

8. Farm Income (11,220) - Value of Operator's Time (4,800) =

$$\frac{\text{(6429)}}{\text{Average Farm Capital (72,820)}} = \underline{(8.84)\%} \text{ Return on Investment.}$$

9. Labor Earnings (7822) - Value of Operator's Time (4800) = Return above all Costs (3022).

10. $$\text{Labor Earnings } \underline{(7822)} + \text{ Unpaid Labor } \underline{(400)} = \frac{\text{(8222)}}{\text{Work Units X 10 (5920)}} = \frac{\text{(\$1.39)}}{\text{Returns per Hr.}}$$

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2. Suggested Teaching Activities and Experiences:

Provide each family with the information given in the supplementary data and have them determine the profits of the example farm. A sample worksheet is provided to assist the instructor in preparing for this unit. The worksheet can be used as is with the figures in the parenthesis omitted. The instructor may wish to expand on this unit by providing additional information from a farm record and adding other calculations.

After the families have worked out each of the various measures of profit for the example farm, discuss the significance of these measures, illustrating the advantages and disadvantages of comparing farms by each of these measures. Emphasize those measures that are used in the current analysis report.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Documentation For Farm Business Record Analysis.

Part II - Suggested On-Farm Instruction Activities.

Review the measures of farm earnings which the family completed at the last class. Discuss the applicability of each measure to their own business. Help the family select the measures most appropriate for their farm operation. If the preliminary farm business analysis is available, assist families in interpreting the report. Identify the measures of earnings and ask family to evaluate if the measure indicates a strong or weak position in relation to the average farm in the area.

UNIT II - III

MEASURES OF FARM BUSINESS SIZE

Teacher Objectives:

1. To acquaint families with the various measures of farm business size and to show the relationship between size and earnings.

Part I - What Are the Common Measures of Farm Business Size?

1. Subject Content:

Various Measures of Size of Business*

217 Farms in East South Central Minnesota

Item	Average 217 Farms	Most Profitable 43 Farms	Least Profitable 43 Farms
Total Acres	302	382	285
Tillable Acres	263	338	244
Farm Capital (Dec. 31)	$112,494	$154,976	$102,570
Number of Workers	1.4	1.6	1.4
Work Units	375	511	268
Total Farm Sales	$40,207	$63,284	$26,537
Sales Productive Livestock	$29,576	$47,918	$15,700
Total Sales Crops	$ 8,651	$11,507	$ 9,218
Labor Earnings	$ 8,240	$16,640	$ 353

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*Vocational Agriculture Farm Analysis, Austin Area Vocational-Technical School, 1969.

2. Suggested Teaching Activities and Experiences:

Through questions and class discussion, bring out the common measures of farm business size.

List these items on the chalkboard as they are brought up. Supplement the list to include those listed in the subject content if they are not all mentioned by the class.

Use a visual with recent information similar to that shown in the subject content table. Discuss the relationship of each of these size factors to earnings. It should be noted that some of these measures are more significant in certain areas of Minnesota than others. Certain factors will be more important in some years than in others. Total work units and tillable acres should be illustrated to be the most reliable measures of size. The discussion at this point should be held to a general level since these measures will be studied in detail in teaching Unit II - VII. At that time, it can be related more directly to the individual family situation. This class may be concluded by pointing out that farm management studies have shown that in general, larger farms pay better than small ones. Larger farms make it possible to use equipment and other investments more efficiently. However, if costs are not under control, large farms can lose more than small ones.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

Part II - Suggested on-Farm Instruction Activities.

Review the measures of farm size. Determine if the parts of the farm business which are making major contributions to farm size are also major contributors to farm income. Encourage the family to discuss ways in which labor might be used more efficiently either through increases in farm size or in distribution of the labor requirements.

UNIT II - IV

GENERAL INTERPRETATION OF THE ANALYSIS

Teacher Objectives:

1. To begin families in a general interpretation of the farm business analysis.

Part I - How Does This Year's Analysis Compare With Former Years?

1. Subject Content:

    A. Trends in farm receipts over the past four years.

        1) Dairy product sales.
        2) Beef cattle sales.
        3) Hog sales.
        4) Other livestock sales.
        5) Sales of soybeans, corn and other crops.
        6) Total sales.
        7) Farm capital.

    B. Trends in farm expenses.

        1) Livestock purchases.
        2) Other livestock expenses.
        3) Fertilizer purchases.
        4) Other crop expense (mostly chemical weed control)
        5) Custom work.
        6) Other farm expenses.
        7) Cash operating expense.
        8) Capital purchases.
        9) Interest on farm capital.
        10) Total farm expense in 1968.

    C. Comparison with previous year.

        1) Study the relationship between total farm sales and cash operating expense.

A Selected Summary of Farm Earnings By Years

Farm Receipts	1965	1966	1967	1968
Dairy Products	$6,154	$7,342	$8,112	$8,917
Beef Cattle	4,781	5,414	5,795	5,984
Hogs	10,413	11,688	10,948	11,901
Soybeans and Other Crop Sales	3,010	3,859	4,121	4,365
Total Farm Sales	31,372	36,425	37,995	40,207
Increase in Farm Capital	7,170	9,998	6,018	5,712
Total Farm Receipts	38,905	46,794	44,356	46,298

In this example, receipts which showed no significant trend over the past four years and were not shown in the above table are dairy cattle sales, sheep and wool sold, poultry and egg sales, corn sales, diverted acre payments and family living from the farm.

Farm Expenses	1965	1966	1967	1968
Beef Cattle Purchases	$2,403	$3,141	$2,914	$3,214
Fertilizer	1,612	1,949	2,420	2,314
Miscellaneous Livestock Exp.	629	767	855	962
Other Crop Expense	1,312	1,645	2,002	2,123
Custom Work Hired	813	983	1,235	1,327
Cash Operating Expense	18,988	22,416	22,594	23,300
Capital Purchases	6,304	8,949	10,652	8,218
Interest on Farm Capital	4,122	4,707	4,900	5,481
Total Farm Expense	30,129	37,006	39,167	38,058
Labor Earnings	$8,776	$9,788	$5,189	$8,240

Expenses which showed no significant trend over the past four years in this example are: dairy cattle purchases, poultry, feed bought, repair of equipment, machinery and buildings, wages of hired labor, taxes, general farm expense and board for hired labor.

2) Compare the most profitable farms in the most recent two years:

Summary of Farm Earnings - 1967 - 1968*

	Items	1967 - 43 Most Profitable Farms	1968 - 43 Most Profitable Farms
1	Returns and Net Increases		
2	Productive Livestock		
3	Dairy Cattle	$12,996	$12,949
4	Other Dairy Cattle	3,443	3,617
5	Beef Breeding Cattle	78	227
6	Feeder Cattle	2,716	3,630
7	Complete Hog Enterprise	12,955	14,594
8	Hog Finishing Enterprise	193	4,920
9	Producing Weaning Pigs	664	1,382
10	Farm Flock Sheep	14	13
11	Feeder Lambs		
12	Chickens (incl. Hens & Broilers)	113	103
13	Turkeys		
14	Other Productive Livestock		
15	All Productive Livestock	33,172	41,435
16	Value of Feed Fed to Livestock	17,460	21,339
17	Return Over Feed From Livestock	15,712	20,096
18	Crop, Seed and Feed	18,515	20,364
19	Income From Labor Off the Farm	273	301
20	Cooperative Patronage Refunds	475	486
21	Miscellaneous Farm Income	513	345
22	Total Returns and Net Increases	35,488	41,592
23	Expenses and Net Decreases		
24	Truck and Auto (Farm Share)	1,495	1,716
25	Tractors and Crop Machinery	4,625	4,876
26	Electricity	488	557
27	Livestock Equipment	847	1,155
28	Buildings, Fences & Tiling	1,675	2,518
29	Bare Land		
30	Miscellaneous Livestock Expense	1,153	1,420
31	Labor	2,312	2,321
32	Labor Charge for Other Operator(s)	665	733
33	Property Tax	1,890	1,557
34	General Farm Exp. & Telephone	632	691
35	Interest on Farm Capital	6,272	7,408
36	Total Expenses and Net Decreases	22,054	24,952
37	Labor Earnings	13,434	16,640
38	Number of Farm Operators	1	1

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*Adapted from Table 3, Vocational Agriculture Farm Analysis, Annual Report, Austin Area Vocational School, Austin, Minnesota, 1967 and 1968.

2. Suggested Teaching Activities and Experiences:

Use the summary of earnings data for the past four years to show the trends in receipts and expenses over this period of time. Only the receipts and expenses that show a significant trend over the period of years need to be included in this data. This makes it easier to focus attention on these items. For example, the instructor can call attention to the fact that the increasing sale of dairy products was due to amount of milk produced and a somewhat better price. This same trend is evident in the beef enterprise, except that higher prices were more responsible than an increase in production. The main points to emphasize here are that total farm receipts have been increasing steadily over the past four years and that families continue to increase their investment in the farm business.

Continue discussing each of the items of expense showing how these have changes over the past five years. The instructor can illustrate that even though farm sales have gone steadily upward, the rise in total farm expenses has continued upward also. Unusually high capital investments caused a drop in earnings in 1967. Families seem to have adjusted this in 1968 to bring earnings nearly in line with former years.

Next, examine the summary of earnings by enterprise for the most profitable farms in 1967 and 1968. Call attention to the items listed under subject content. In summary, the example in this unit shows that dairy farms and hog farms continued to dominate the most profitable group. Farm expenses were up, but high earning farms in 1968 produced about $7,000 more hogs than in 1967 resulting in more than $3,000 increase in earnings. Emphasize that some of these were different farms in 1967 than 1968. The main reason for this change of farms was the relatively more favorable prices of hogs and therefore higher profit level. Dairy farms had about the same total returns and increases in both years.

This discussion should be the starting point for each family to begin study of its own farm business analysis.

This unit points out that comparative earnings will vary from year to year, depending on enterprises and prices. Later units will illustrate how efficiencies cause extreme variations in earnings on farms having the same enterprises.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

Part II - Suggested On-Farm Instruction Activities.

Review the analysis report with the family. Point out the areas of business strength and weakness. Encourage families to list the things they might do to improve these businesses; particularly those things that are clearly indicated by the analysis report. Ask the family to file the list for future reference.

UNIT II - V

THE IMPORTANCE OF INVENTORIES

Teacher Objectives:

1. To teach families how to interpret the summary of inventories in their Farm Business Analysis.
2. To illustrate the importance of inventory changes to earnings statements and enterprise efficiencies throughout the analysis report.

Part I - Does The Distribution of Farm Capital Have An Influence On Earnings?

1. Subject Content:

    A. Classification of farm capital.

        1) Fixed assets.
            a) Land.
            b) Buildings.
        2) Working assets.
            a) Machinery and equipment.
            b) Breeding livestock.
        3) Current assets.
            a) Market livestock.

    B. Correlation between distribution of farm capital and earnings.

        1) Do high profit farms have more liquid assets?
        2) Do high profit farms have more long term assets?

Summary of Inventories - December 31, 1968*

	Average	%**	Most Profitable	%**	Profitable	%**
Productive Livestock	$15,232	13.5	$22,520	14.5	$9,136	8.9
Crop, Seed and Feed	13,424	11.9	19,923	12.9	12,590	12.3
Power, Mach, & Equip.	16,948	15.2	23,258	15.0	14,271	13.9
Land	44,703	39.7	58,851	38.0	46,757	45.6
Buildings,Fences,etc.	22,187	19.7	30,424	19.6	19,817	19.3
Total Farm Capital	112,494	100.0	154,976	100.0	102,570	100.0
Labor Earnings	8,240		16,640		353	

*Adapted from Vocational Agriculture Farm Analysis, Annual Report, April, 1969.

**Expressed as a percent of total farm capital.

2. Suggested Teaching Activities and Experiences:

Discuss the classifications of farm assets, pointing out that current assets are considered short term; fixed assets are long term and the least liquid, while working assets are immediate. Using the material presented under "Subject Content", show that the distribution of capital does not appear to be significantly different between the average and high earning group. The favorable position of livestock as compared with crops in 1968 shows up in the inventory analysis in that the least profitable group had a lower percent of investment in productive livestock and a higher investment in land. If crop prices were more favorable relative to livestock prices, this relationship would not show up as clearly, if at all. Crop farmers, of course, do not utilize their labor fully throughout the year. On farms where labor utilization is a critical factor in total farm productivity, crop farms cannot expect returns equal to the efficient crops - livestock farmers, since labor is poorly utilized for several months during the year.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

B. Using Farm Analysis Information.

Part II - How Do Inventory Changes During the Year Influence Earnings Statements and Enterprise Efficiencies Throughout the Analysis?

1. Subject Content:

A. Trends in inventory changes:

1) Upward trend in liquid assets - Farm A.
2) Increasing working capital - Farm A.
3) Decreasing farm capital Farm B.

2. Other significant points:

   A. Change in net worth.

   B. Capital investment per worker.

   C. Capital investment per work unit.

   D. Capital turnover.

Beginning and Ending Inventories Compared - 1968*

	Farm A		Farm B	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Productive Livestock	$16,624	$20,778	$18,425	$18,375
Crop, Seed & Feed	9,722	13,021	10,794	10,693
Machinery & Equipment	11,818	9,743	18,816	16,702
Land	12,000	12,000	13,000	13,000
Buildings, Fences, etc.	27,277	27,918	16,685	15,710
Total Farm Capital	$77,441	$83,460	$77,720	$74,480
Change	+$6,019		-$3,240	
Total Liabilities	$23,500		$ 8,213	
Net Worth	77,207		50,007	
Change in Net Worth	+12,478		+ 856	
Capital Investment Per Worker	53,633		63,416	
Capital Investment Per Unit	1,707		1,915	
Total Farm Receipts	59,431		25,367	
Capital Turnover	1.4		2.9	
Labor Earnings	$17,681		$ 1,501	

*Adapted from the Vocational Agriculture Farm Analysis from the records of two Faribault area families.

3. Suggested Teaching Activities and Experiences:

   Point out that investment costs are an important part of the cost of operation. It is often said, "it takes money to make money". If the investment per work unit is too high, however, this may indicate that capital is not being used to capacity.

Discuss the inventories of Farm "A" and Farm "B". Show that Farm "B" has liquidated some capital which may influence earnings next year. Point out the differences in net worth change between these two farms.

Capital turnover is the number of years required for total receipts to equal total investment. Two and one-half years are considered to be normal on most general farms in Minnesota. Note that Farm "A" would require 1.4 years while Farm "B" would require 2.9 years for total receipts to equal the investment in farm capital.

Point out that working capital is a real cost in any farm business. An investment made in the farm business should be expected to give a return that would be favorable with any other investments of similar risk. Each family should be directed to raise three questions relative to any investment planned:

A. Will it increase profits?

B. Is it the best use of capital?

C. Will the profits be rapid enough to repay the loan?

Since these points will be covered in detail in a later lesson, the questions should be used only as a thought starter.

Have each family follow its capital change or beginning and ending inventories through the various tables in the analysis report to illustrate that inventories are used in nearly every table in the report. The influence of inventories in tables 2A, 2B, 3, 4, 5, 6A, 6B, 8, 10 and one or more livestock tables should be illustrated. Documentation for Farm Business Record Analysis will be very useful to the instructor in making these points.

4. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Documentation for Farm Business Record Analysis.

Part III - Suggested On-Farm Instruction Activities.

Check with families to be sure beginning inventories have been correctly entered in the new account book. Review the use of inventory information in the analysis report. Using the net worth statement, help families to interpret their financial status. Emphasize the use of gain in net worth as a measure of family progress. Help family to determine capital turnover.

UNIT II - VI

EVALUATING THE CROPPING PROGRAM

Teacher Objectives:

1. To teach the family to use the Farm Business Analysis to evaluate its cropping program.

Part I - What Does The Farm Business Analysis Show A Family About Its Cropping Program?

1. Subject Content:

    A. Index of crop yields.

    1) Good general information but deceptive if not supplemented with other information.

    B. Index of crop selection.

    1) Varies considerably with land capabilities.
    2) Must be evaluated along with crop yields.
    3) Crops-livestock relationship must be considered.
    4) Ratings must be geared to the area and individual farm.

    C. Gross return per acre.

    1) Combined rating of selection and yield.
    2) Probably the best single measure of crops.

    D. Comparison of individual crop yields.

    1) May pinpoint strengths or weaknesses in the cropping program.

    E. Return over supplemental and allocated costs.

    1) Supplemental costs.
        a) Fertilizer
        b) Chemicals
        c) Seed and Others
    2) Allocated costs
        a) Power and machinery expense
        b) Land cost
        c) Miscellaneous costs

Crop Data From Analysis Reports*

Item	Average 217 Farms	43 Most Profitable	43 Least Profitable	Farm A	Farm B
Index of Crop Yields	100	107	87	127	97
% Till.Land H.R. Crops	68.8	71.8	68.7	70.5	51.0
Gross Return Per Acre	$69.48	$78.79	$58.93	$95.02	$66.03
Corn Bu/A	88.5	94.5	79.7	118	103
Oats Bu/A	71.7	73.4	66.8	----	70
Alfalfa Hay Ton/A	3.3	3.6	3.1	4.1	2.4
Soybeans Bu/A	26.6	28.0	22.8	33.0	----
Labor Earnings	$8,240	$16,640	$ 353	$12,850	$3,659

*Adapted from *Vocational Agriculture Farm Analysis*, Annual Report, 1968, East South Central Minnesota, Austin, Minnesota, April 1969 and from Analysis Reports of two Faribault area families.

2. Suggested Teaching Activities and Experiences:

Discuss the index of crop yields as shown in the analysis report. Point out that this shows a comparison of composite yields of all crops. Use the information on Farm "A" to show that this index may be reliable if crop yields of all crops are on a comparable level. The yields of all crops on Farm "A" are above average. Using the information on Farm "B", show that the index of crop yields is not a reliable measure. The yield of corn on this farm is 116 percent of average while the yield of alfalfa hay is only 73 percent of average. This farmer may be getting satisfactory corn yields but should study his fertilization, seeding and management practices of alfalfa. Concentrated efforts on this crop will be needed to strengthen the program.

Discuss the index of crop selection. Show that farms vary considerably in the amount of corn that can be grown because of the varying topography. One farm with an index of crop selection of 45 may be approaching the limits of corn, while another farm with an index of 80 should consider growing more corn. In general, without considering soil losses, a farm should have as many acres in high return crops as possible without depressing yields in a significant way. This factor must be considered only after the farm capabilities, the livestock program and the yields are taken into account. Farms that raise a great deal of corn are more likely to have hogs and/or beef than a farm which grows a small acreage of corn. For this reason a high index of crop yields will tend to go along with high earnings when these enterprises are most profitable. In years, such as 1968, when dairy cows and hogs were both generally profitable, the index of crop selection may have little meaning until the capabilities of the farm are studied.

Gross return per acre is perhaps the best single measure of the cropping program because it combines yield and crop selection into one value. Gross return must be used as a factor with some reservations because those crops with high production costs will tend to look better than they are. Supplemental costs of fertilizer, chemicals, seed and other as well as allocated costs of power and machinery and land are also being used to evaluate individual crops. These inputs are important in contributing to yields and must be considered in the final evaluation of individual crop selection. These costs and return over these costs will be taken up in a later unit.

Point out how allocated costs are determined. Have farmers review their power and machinery costs carefully. Discuss how such costs may be taken into consideration when determining the relative profitablility of various crops or when comparing crops on the basis of gross return per acre.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Modern Farm Management.

   C. Profitable Farm Management.

   D. Documentation for Farm Business Record Analysis.

   E. Using Farm Analysis Information.

Part II - Suggested On-Farm Instruction Activities.

Assist with preparation of the crop and fertilizer plan for the current crop season. Refer to the analysis report to evaluate past management practices. Show how crop yield index can be affected with improved yields of specific crops. On the basis of projected yields or yield goals, determine gross income per acre. Introduce idea of opportunity costs of growing low producing crops. Aid in preparing a mid-year crop and feed check.

UNIT II - VII

ANALYZING THE SIZE OF BUSINESS

Teacher Objectives:

1. To teach families how to evaluate the size of their farm business.
2. To illustrate the relationship between size of business and farm earnings.

Part I - What Is The Correlation Between Size of Business and Farm Earnings?

1. Subject Content:
    A. Size of business as measured by work units.
        1) Total work units.
            a) A good measure of farm size.
        2) Distribution of work units.
            a) Work units on crops.
            b) Work units on livestock.
    B. Number of workers.
    C. Number of animal units.
    D. Number of tillable acres.
        1) Increasingly important with higher mechanization.
        2) Importance depends on productivity potential of the area.
    E. Total farm capital

Measures of Farm Business Size*

Item	Average of 217 Farms	43 Most Profitable	43 Least Profitable	Farm A	Farm B	Farm C
Total Work Units	375	511	268	624	281	420
Work Units Crops	122	156	116	114	93	113
Work Units Livestock	240	340	143	510	188	285
Work Units Per Worker	263	325	200	499	281	194
Number of Workers	1.4	1.6	1.4	1.3	1.0	2.2
Total Animal Units	86	123	54	153	108	60
Tillable Acres	263	338	244	205	434	225
Total Farm Capital	112,494	154,976	102,570	146,006	190,043	82,292
Labor Earnings	8,240	11,640	353	20,612	9,009	2,233
Gross Return/Acre	$69	$70	$59	$97	$70	$64
Index of Return for Feed	100	108	84	102	108	65

*Adapted from Vocational Agriculture Farm Analysis, Annual Report, East South Central Minnesota, Austin, Minnesota, April 1969, and the 1968 Farm Business Analysis of three Faribault area families.

2. Teaching Activities and Experiences:

Discuss briefly the significance of work units as a measure of farm size. Illustrate that work units per worker is one of the best measures of labor efficiency. These points have been covered in a previous unit, but a brief review will set the stage for the following discussion.

Refer to the previous table and show the strong relationship between total work units and labor earnings when dealing with group averages. Everything else being equal, the farms with the greatest number of work units will have the highest earnings. Greater business size will contribute to earnings only if each unit of work is profitable. Discuss Farm "A" and point out that adequate size contributes to high earnings in an efficient business. Farm "C" illustrates that size can work to the disadvantage of the family, if the enterprises are not efficient. Farm "B" has respectable earnings, even though it is small in size by these measures.

Work units per worker measure the accomplishment of the individual worker. A high accomplishment per worker will contribute toward higher earnings, if the enterprises are efficient. Just keeping busy with inefficient enterprises does not contribute to high earnings. The number of workers contributes toward high earnings only if these workers are engaged in profitable enterprises. Care must be used in interpreting analysis reports in such a way that size and efficiency are interpreted together.

Generally, work units on crops and the number of tillable acres can be studied together. In productive soil areas, a given amount of time spent on a cropping enterprise will pay a higher return for labor than the same amount of time spent on livestock enterprises. Highest labor earnings will generally result from a combination of crops and livestock enterprises that will fully utilize the available labor throughout the entire year.

The number of livestock units on a farm gives an indication of how much feed is required, but is not a good indication of the amount of labor required; for example Farm "B" is a Beef-Hog Farm with 108 animal units and 188 work units on livestock, while Farm "C" is a dairy farm with a few hogs having 60 animal units and 285 work units on livestock. Increased livestock could not be expected to increase earnings on Farm "C" with the Index of Return for feed being only 65.

Business size has a high statistical correlation with earnings. However, in many farm businesses the efficiency of the enterprises is more important than size. A good slogan might be "Get Better Before Bigger."

The accomplishments per worker are influenced to a large extent by buildings, machinery and equipment on the farm. The relationship of mechanization to cost of production and the accomplishment per worker will be illustrated in Teaching Unit VIII.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Profitable Farm Management.

   C. Records for Farm Management.

   D. Documentation for Farm Business Record Analysis.

Part II - Suggested On-Farm Instruction Activities.

Review the measures of farm size for the family's individual business. Determine the distribution of work units on their farm. Discuss mechanization of their business in relation to the work units per worker reported in the analysis. Review family plans for any business changes which may affect a change in business size. Explore the relationship proposed changes may have to other measures of business organization and efficiency.

UNIT II - VIII

ANALYZING MACHINERY, EQUIPMENT AND BUILDING COSTS

Teacher Objectives:

1. To teach families how to evaluate machinery, equipment and building costs and to encourage them to make use of the evaluation along with other available information to guide them in future investments.

Part I - How Can Machinery, Equipment and Building Costs Be Evaluated?

1. Subject Content:

   A. Methods of comparison.

      1) Total farm capital.
         a) Capital investment per work unit.
         b) Capital investment per worker.

      2) Power, machinery, equipment and building cost per work unit.
         a) Tractor and crop machinery expense per work unit.
         b) Farm share of auto and truck expense per work unit.
         c) Livestock equipment expense per work unit.
         d) Building, fencing, tiling expense per work unit.

      3) Tractor and crop machinery expense per crop acre.
         a) Allocation of power and crop machinery expense to individual crops.
         b) Allocation of custom work hired to individual crops.

Machinery, Equipment and Building Costs*

Item	Average 217 Farms	43 Most Profitable	43 Least Profitable	Farm A	Farm B
Total Farm Capital	112,494	154,976	102,570	124,812	82,292
Capital Investment per worker	79,435	96,533	79,297	78,203	38,757
Power, Machinery, Building Expenses/W.U.	23.36	21.25	30.23	25.07	15.33
Tractor and Crop Machine Expenses/W.U.	11.45	9.80	15.84	11.44	5.74
Truck & Auto Expense/W.U.	3.65	3.40	4.29	4.60	4.00
Livestock Equip. Expense/W.U.	1.84	2.16	1.59	1.83	2.87
Buildings, Fencing, Tiling/W.U.	5.23	4.77	7.17	6.13	2.05
Tractor & Crop Mach.Exp./Acre	15.79	16.04	16.51	19.89	10.71
Power & Crop Mach. Exp./A.Corn	16.50	16.72	17.55	25.14	11.33
Custom Work/Acre Corn	3.28	2.87	3.79	-----	4.74
Work Units per Worker	263	325	200	269	194
Labor Earnings	8,240	16,640	353	14,184	2,233

*Adapted from Vocational Agriculture Farm Analysis,East South Central Minnesota, Austin, Minnesota, April 1969, and from the analysis reports of two Faribault area families.

2. Suggested Teaching Activities and Experiences:

Machinery, equipment and building costs are very difficult to evaluate on the basis of group averages or standards because the efficiency level, product prices and accomplishment of the worker are all closely interrelated with these costs.

Families are very interested in these costs and are eager to search for clues that will help them to improve their farm business. This unit can be used to begin to acquaint students with the various measures and to illustrate that the lowest investment that will make the best use of all resources will result in the greatest income. As can be illustrated from the group averages as well as Farm A and Farm B data, there is no indication that high or low costs on a work unit basis or acre basis can be correlated with earnings. As each of these expenses are discussed, it should be brought out that these costs vary widely with each type of operation and must be studied on an individual basis. The following questions will emphasize the importance of study before making investments.

A. How do you determine whether or not to make a purchase?

1) Will it increase profits?
    a) Increase volume? Acres? Cows? Bushels?
    b) Will it save labor costs?
    c) Will labor saved be put to productive use?
    d) Will it improve efficiency?
    e) Will it lower costs? Save heat? Lower Vet costs? Lower operating costs?
2) Is it the best use of capital?
    a) Tiling or building a hog house?
    b) Invest in equipment for narrow rows or spend money on the dairy barn?
    c) Buy a new combine or spend more on weed control and fertilizer?
    d) Will the capital expenditure force a cutback in necessary production expenses?
3) Will profits repay the loan as fast as needed?
    a) How soon will the investment result in more spendable income?

These questions all point to the need for a partial budget and it is a good opportunity to schedule a farm visit to work individually with those who are contemplating major capital expenditures.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Records for Farm Management.

   C. Farm Management Economics.

   D. Documentation for Farm Business Record Analysis.

Part II - Suggested On-Farm Instruction Activities.

Generally review the machinery,equipment and building costs for the farm unit. Assist the family in determining the costs of ownership of one or more machines. Discuss alternatives to capital investments in machinery, equipment and building. If family goals include investment in these items, assist families in preliminary plans for acquisition.

UNIT II - IX

ANALYZING LIVESTOCK EFFICIENCIES

Teacher Objectives:

1. To teach families how to use their analysis reports to determine relative enterprise efficiencies.

2. To teach families how to interpret the factors of costs and returns from individual livestock enterprises.

Part I - What are the common measures of profitability of livestock enterprises?

1. Subject Content:

   A. Levels of production or net increases

      1) Rates of production per unit
      2) Quality of production
         a) Milk test
         b) Weight of market livestock sold

   B. Feed consumed per unit of production

      1) Amount of farm grains
      2) Amount of purchased feed
      3) Amount of dry roughages
      4) Amount of succulent feeds

   C. Feed cost per unit of production

      1) Price of feed
      2) Balance of ration

   D. Return over feed per unit of production

   E. Return in relation to feed cost

      1) Return for $100 of feed
      2) Index of return for $100 of feed

   F. Supplemental costs

      1) Miscellaneous livestock expense
      2) Veterinary expense
      3) Custom work

   G. Profit of the enterprise

      1) NI = (SP-C)Q
         [Net Income = (Selling Price - Cost) Times Quantity]

2. Suggested Teaching Activities and Experiences:

Discuss the items outlined under "subject content". Illustrate that it is necessary to evaluate livestock enterprises from a number of different viewpoints because of the variation of input costs between enterprises. Show briefly how net increases and/or total value produced is determined. Emphasize the importance of physical quantities and value in evaluating the production efficiency of an enterprise. Caution families against jumping to conclusions on the basis of one analysis report while stressing the fact that these figures are only as accurate as the inventories, production and feed distribution that was used in their account book.

Refer to the analysis report to show that feed represents varying proportions of the total cost of production with different livestock enterprises. Return for $100 of feed might be a good method of comparing one dairy herd with another, but cannot be used to compare one enterprise with another. Break-even points may be illustrated to emphasize this point. Supplemental costs may be used to show one group of costs that are not reflected in the return per $100 of feed or in return over feed cost per unit of production. Building costs, interest, labor and some overhead costs that are not allocated to specific enterprises in the analysis must all be considered in evaluating the enterprise.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

Part II - How do you interpret the factors of costs and returns for the dairy enterprise?

1. Subject Content:

   A. Evaluation of returns from dairy cows.

      1) Production
         a) Pounds of butterfat per cow.
         b) Pounds of milk per cow.
         c) Percent of butterfat in milk.
      2) Value of produce per cow.
         a) Products sold.
         b) Products used in home.
         c) Milk fed to calves.
         d) Net increases in value.
      3) Amount of feed per cow (lbs.).
         a) Corn.
         b) Small grain.
         c) Commercial feeds.
         d) Legume hay.
         e) Other hay.
         f) Silage.
      4) Feed costs per cow.
         a) Concentrates.
         b) Roughages.
         c) Pasture.
      5) Returns above feed cost per cow.
      6) Returns for $100 of feed.
      7) Feed cost per pound of butterfat.
      8) Amount of milk per lb. of concentrate.
      9) Size of the enterprise.
         a) Number of cows.
         b) Total value produced.
      10) Supplemental costs.

   B. Evaluation of returns from other dairy cattle.

      1) Net increases in value of other dairy cattle.
      2) Amounts of feed per head.
         a) Concentrates.
         b) Hay and fodder.
         c) Silage.
         d) Whole milk.
      3) Cost of feed per head.
         a) Concentrates.
         b) Roughages.
         c) Milk.
         d) Pasture

4) Returns above feed cost per head
5) Returns for $100 of feed
6) Size of enterprise
    a) Number of head
    b) Net increase in value
7) Supplemental costs

C. Evaluation of returns from all dairy cattle

1) Dairy cows and other cattle combined
    a) All data is on per cow basis
    b) Valid comparisons only if cow replacement ratio is typical

D. Supplementary data:

1) Comparison of Faribault Dairy Enterprises, 1968 - by Farms
2) Herd No. 1
3) Herd No. 28

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Comparison of Faribault Dairy Enterprises, 1968 - by Farms *

Ret./ Feed Cost		B.F. per Cow	Farm Grain	Purch. Feed	Total Conc.	Dry Rough.	Silage	Past Cost	Total Feed Cost	Cost lb. B.F.	Ret./ $100 Feed	Index Cow	Index O.D.
1.	436	513	3917	270	4187	5634	6197	19.24	178	35	344	143	130
2.	427	453	6202	326	6528	5070	4056	-	190	42	325	135	141
3.	423	508	6689	642	7331	8054	2685	-	246	49	272	112	72
4.	421	482	4142	468	4610	6061	7323	9.85	196	41	315	130	103
5.	415	524	5855	312	6167	4754	7289	7.41	199	38	309	128	110
6.	406	530	4167	1361	5528	2208	18130	-	236	45	272	113	133
7.	404	488	6013	1156	7169	6271	9968	-	256	52	258	107	121
8.	393	487	5070	515	5585	4974	12804	13.23	225	46	275	114	90
9.	382	506	3832	600	4432	5183	10576	8.22	197	39	294	122	87
10.	380	519	3499	315	3814	9107	8061	2.50	211	41	281	116	134
11.	376	522	4473	517	4990	6390	14633	14.57	231	44	263	109	57
12.	367	444	3788	402	4190	7037	8519	12.72	203	46	281	116	139
13.	365	421	3929	998	4927	5977	9535	-	193	46	289	120	87
14.	365	481	4335	3663	7998	4661	12712	-	250	52	246	102	101
15.	362	461	4340	234	4574	6053	3561	16.29	182	39	299	124	74
16.	357	415	5084	244	5328	5662	3992	19.98	197	47	281	116	86
17.	347	467	4140	702	4842	5093	15862	19.12	239	51	245	102	151
18.	346	447	3969	301	4270	7729	14924	-	217	49	260	108	164
19.	338	411	4296	111	4407	8914	9137	11.28	215	52	257	107	86
20.	338	468	3118	796	3914	7889	11222	7.50	221	47	253	105	107
21.	332	455	5528	459	5987	5780	9354	11.63	224	49	248	103	200
22.	323	389	2624	137	2761	5106	8170	7.36	140	36	331	137	87
23.	321	438	5008	837	5845	6027	137	9.49	205	47	256	106	-
24.	320	406	3451	570	4021	4156	10520	18.44	189	47	269	111	112
25.	319	439	4027	833	4860	6769	6215	10.00	212	48	251	104	107
26.	313	441	4158	339	4497	6768	--	11.48	169	38	285	118	47
27.	313	418	4697	395	5092	6816	13881	-	220	53	242	100	107
28.	310	419	4711	935	5646	3725	11480	15.64	235	56	232	96	63
29.	304	420	5099	57	5156	6607	6006	9.07	195	47	256	106	88
30.	299	446	4146	154	4300	8093	10895	-	205	46	246	102	116

*Only 30 of 51 dairy farms in the Faribault classes in 1968 are shown to illustrate how individual dairy herds can be used to show efficiencies.

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Comparison of Faribault Dairy Enterprises, 1968 - by Farms, cont'd

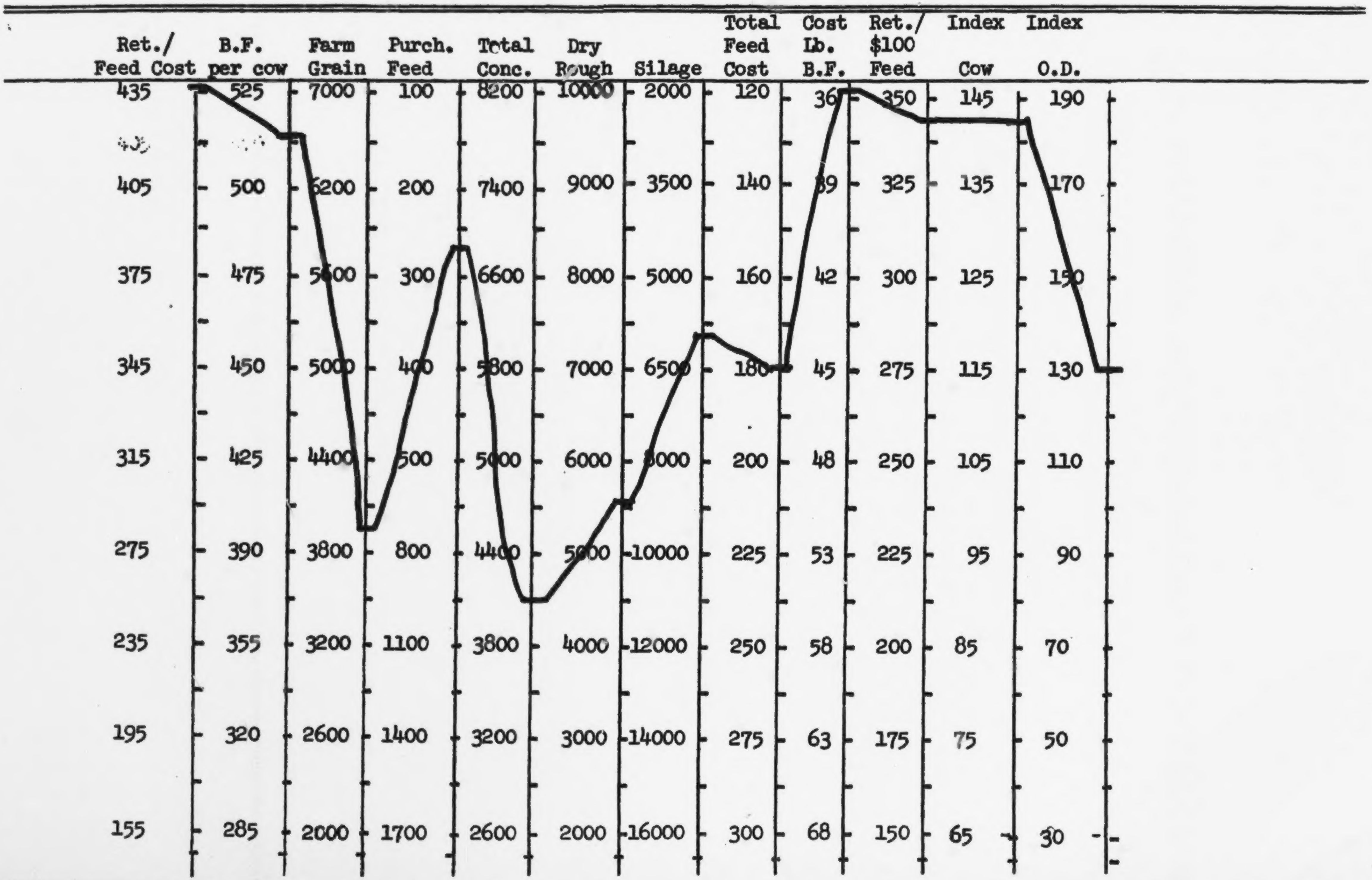
Ret./ Feed Cost	B.F. per Cow	Farm Grain	Purch. Feed	Total Conc.	Dry Rough	Silage	Past. Cost	Total Feed Cost	Cost lb. B.F.	Ret/ $100 Feed	Index Cow	Index O.D.
31. 293	393	3646	423	4069	3913	15459	-	178	45	264	109	51
32. 283	429	5044	889	5933	9187	6714	-	251	59	213	88	134
33. 273	443	5723	496	6219	8320	9256	-	243	55	213	88	99
34. 270	372	5203	390	5593	6628	14264	-	233	63	216	90	111
35. 267	337	2444	377	2821	6607	-	4.40	128	38	308	127	110
36. 264	366	2782	629	3411	6113	5579	3.03	161	44	264	109	114
37. 264	450	4550	1479	6029	7067	12721	4.28	276	61	196	81	48
38. 256	375	4846	605	5451	5128	2963	16.41	205	55	225	93	57
39. 253	392	5788	63	5851	4403	11447	12.23	205	52	224	93	117
40. 252	345	3401	211	3612	5818	4273	13.77	158	46	259	107	145
41. 249	386	4074	727	4801	6466	4737	11.65	201	52	224	93	128
42. 248	377	5275	894	6169	6016	6098	15.33	219	58	213	88	112
43. 236	355	3874	430	4304	4623	6951	15.67	175	49	235	97	115
44. 219	442	6976	1477	8453	7267	6584	12.52	305	69	172	71	37
45. 218	455	6968	758	7726	10634	7873	9.37	302	66	172	71	126
46. 218	342	3107	650	3757	6577	8322	11.28	191	56	214	89	90
47. 215	340	2671	297	2968	4671	4079	-	120	35	279	116	94
48. 212	352	4590	747	5337	4220	7399	3.82	184	52	215	89	186
49. 201	345	5258	322	5580	5110	5402	13.87	195	56	203	84	97
50. 198	339	3308	168	3476	8038	11005	15.36	203	60	198	82	90
51. 104	272	2074	911	2985	4856	9054	3.05	172	63	161	66	73

Supplementary data (2)

Faribault Area Vocational-Technical School
Agriculture Department 4/69

Name Herd No 1

Comparison of Faribault Dairy Enterprises, 1968 - by Factors



Supplementary data (3)

Faribault Area Vocational-Technical School
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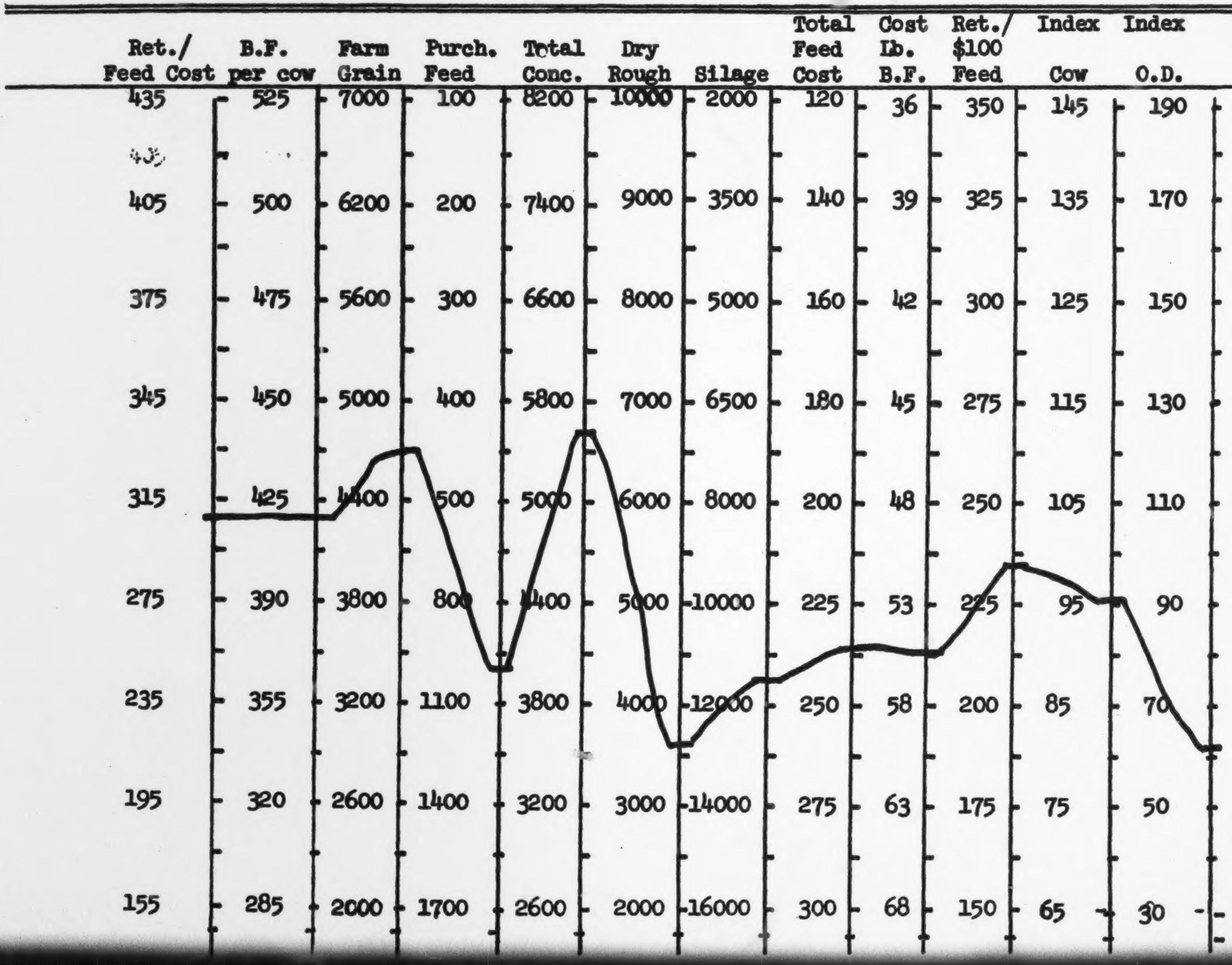
Name Herd No. 28

Comparison of Faribault Dairy Enterprises, 1968 - by Factors



Ret./ Feed Cost	B.F. per cow	Farm Grain	Purch. Feed	Total Conc.	Dry Rough	Silage	Total Feed Cost	Cost Lb. B.F.	Ret./ $100 Feed	Index Cow	Index O.D.
435	525	7000	100	8200	10000	2000	120	36	350	145	190
405	500	6200	200	7400	9000	3500	140	39	325	135	170
375	475	5600	300	6600	8000	5000	160	42	300	125	150
345	450	5000	400	5800	7000	6500	180	45	275	115	130
315	425	4400	500	5000	6000	8000	200	48	250	105	110
275	390	3800	800	4400	5000	10000	225	53	225	95	90
235	355	3200	1100	3800	4000	12000	250	58	200	85	70
195	320	2600	1400	3200	3000	14000	275	63	175	75	50
155	285	2000	1700	2600	2000	16000	300	68	150	65	30

2. Suggested Teaching Activities and Experiences:

Using the outline shown under "subject content", discuss the various items that are used to compare the diary enterprise. Have each family follow its analysis report as these are discussed. Show that the dairy enterprise is compared on the basis of cows, replacement cattle and then a combination of the two.

Using individual farm data shown in the supplementary tables, show that commercial feed and farm grown concentrates have the greatest effect on feed costs. Show how this may be related to the quality of roughage or that it may be a result of overfeeding or underfeeding of high protein feeds. Use Herd No. 1 as an example to illustrate that high production coupled with reasonable feed cost will give greatest returns above feed cost. Show how Herd No. 28 has combined medium production and a high amount of purchased feed to give about $125 less profit than Herd No. 1. A more extreme example could be used to illustrate the same point more dramatically. These examples can raise the question - "Why is one dairy herd so much more profitable than another?" This could well lead into a discussion of breeding, culling practices, milking practices and the many other practices that make some dairymen extremely successful while others make little if any net return.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

Part III -How Do You Interpret The Factors of Costs and Returns For Complete Hog Enterprises?

1. Subject Content:

A. Net increase in value or total value produced per 100 lbs.

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Faribault F&H Analysis - Complete Hog Enterprise Performance, 1968 - by Farms*

Per cwt. Hogs Produced													
Return Over Feed Cost	Farm Grains	Comm. Feed	Total Conc.	Feed Cost	Suppl. Cost	Price Rec.	Net Increase	Return / $100 Feed	Pigs per Litter	Weaned per Litter	Weight / Hog Sold	Price / cwt. Ration	
1. 12.18	285	65	350	9.96	.92	19.87	22.14	222	10.2	9.7	221	2.85	a
2. 11.19	355	52	407	9.85	.66	21.11	21.04	214	11.1	8.9	195	2.42	
3. 10.90	279	82	361	10.80	1.17	19.39	21.70	201	7.4	6.2	257	2.99	
4. 10.90	205	56	261	7.38	1.45	18.67	18.28	248	8.5	7.9	224	2.83	
5. 10.00	323	61	384	9.64	.68	19.68	19.64	204	10.3	8.8	234	2.48	a
6. 9.99	308	79	387	10.87	1.38	19.65	20.86	192	10.4	8.7	231	2.81	a
7. 9.97	288	51	339	8.46	.40	19.72	18.43	218	7.6	6.8	184	2.50	d
8. 9.78	351	54	405	10.05	.52	19.86	19.83	197	10.1	8.2	221	2.48	a
9. 8.86	349	55	404	10.67	.99	20.54	19.53	183	9.7	6.1	210	2.64	
10. 8.77	348	61	409	10.35	.68	19.90	19.12	185	10.5	8.4	227	2.53	a
11. 8.53	359	70	429	11.38	.80	19.35	19.91	175	9.2	7.3	236	2.64	
12. 8.45	364	59	423	10.41	1.88	19.47	18.86	181	10.5	8.6	221	2.46	a-d
13. 8.36	315	70	385	9.78	2.02	19.43	18.14	185	9.3	6.0	211	2.54	a-d
14. 8.09	387	72	459	11.63	1.31	18.99	19.72	170	8.6	7.8	239	2.53	
15. 8.04	369	71	440	10.72	.60	19.02	18.76	175	9.7	6.9	227	2.44	a
16. 7.50	363	81	444	11.11	1.99	19.74	18.61	168	8.7	7.9	215	2.50	a-d
17. 7.26	334	74	408	11.38	.36	18.54	18.64	164	6.3	4.3	228	2.79	d
18. 6.84	492	60	552	13.28	1.43	19.83	20.12	152	10.0	7.4	236	2.41	
19. 6.49	473	55	528	11.91	.72	18.30	18.40	154	7.4	5.1	267	2.26	
20. 6.44	375	79	454	11.67	1.39	17.89	18.11	155	8.3	7.3	258	2.57	b
21. 6.39	364	67	431	12.41	.75	18.13	18.80	151	8.7	6.3	231	2.87	
22. 6.36	476	70	546	13.78	1.74	18.38	20.14	146	9.7	8.4	231	2.52	b
23. 6.35	400	66	466	11.55	.89	19.14	17.90	155	11.6	8.7	232	2.47	
24. 5.71	292	66	358	9.54	1.20	19.68	15.25	160	9.8	8.5	218	2.67	a
25. 5.46	333	65	398	10.04	.64	19.49	15.50	154	9.4	8.0	232	2.52	d
26. 5.25	627	42	669	14.24	1.46	19.29	19.49	137	8.0	3.8	203	2.10	b-c
27. 5.01	588	66	654	14.74	1.14	19.20	19.75	134	8.0	4.3	222	2.25	b-c
28. 4.98	418	98	516	12.68	.86	18.13	17.66	139	9.1	6.8	253	2.46	
29. 4.89	596	63	659	14.93	.71	19.09	19.82	133	7.0	5.2	259	2.25	c-d
30. 4.88	432	64	496	12.15	1.67	18.17	17.03	140	8.0	6.0	236	2.45	

*Only 30 of 38 hog producers in the Faribault area classes are shown on this table.

Page 1 of 2

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Faribault F&H Analysis - Complete Hog Enterprise Performance, 1968 - by Farms

Per cwt. Hogs Produced								Return / $100 Feed	Pigs per Litter	Weaned per Litter	Weight / Hog Sold	Price / cwt. Ration	
Return Over Feed Cost	Farm Grains	Comm. Feed	Total Conc.	Feed Cost	Suppl. Cost	Price Rec.	Net Increase						
31. 4.87	321	102	423	12.68	1.45	17.28	17.55	138	6.1	5.0	286	3.00	b
32. 4.63	200	53	253	7.92	1.06	19.05	12.55	158	9.9	5.4	219	3.13	a-d
33. 4.45	573	61	634	14.20	.50	20.00	18.65	131	7.8	7.0	210	2.24	
34. 3.64	369	48	417	9.96	.48	17.75	13.60	136	9.6	5.8	239	2.39	d
35. 3.35	570	67	637	14.80	.32	19.87	18.15	123	4.8	1.4	223	2.32	c-d
36. 1.65	713	86	799	17.53	1.13	19.40	19.18	109	8.5	7.3	236	2.19	c
37. .90	429	106	535	14.39	1.54	17.11	15.29	106	7.9	4.1	290	2.69	
38. .73	599	58	657	15.52	1.80	19.03	16.25	105	7.7	4.8	225	2.30	c

a) Over 100,000 lbs. produced
b) Under 20,000 lbs. produced
c) Feed accuracy questioned
d) Some purchased feeders included

Faribault Area Vocational-Technical School
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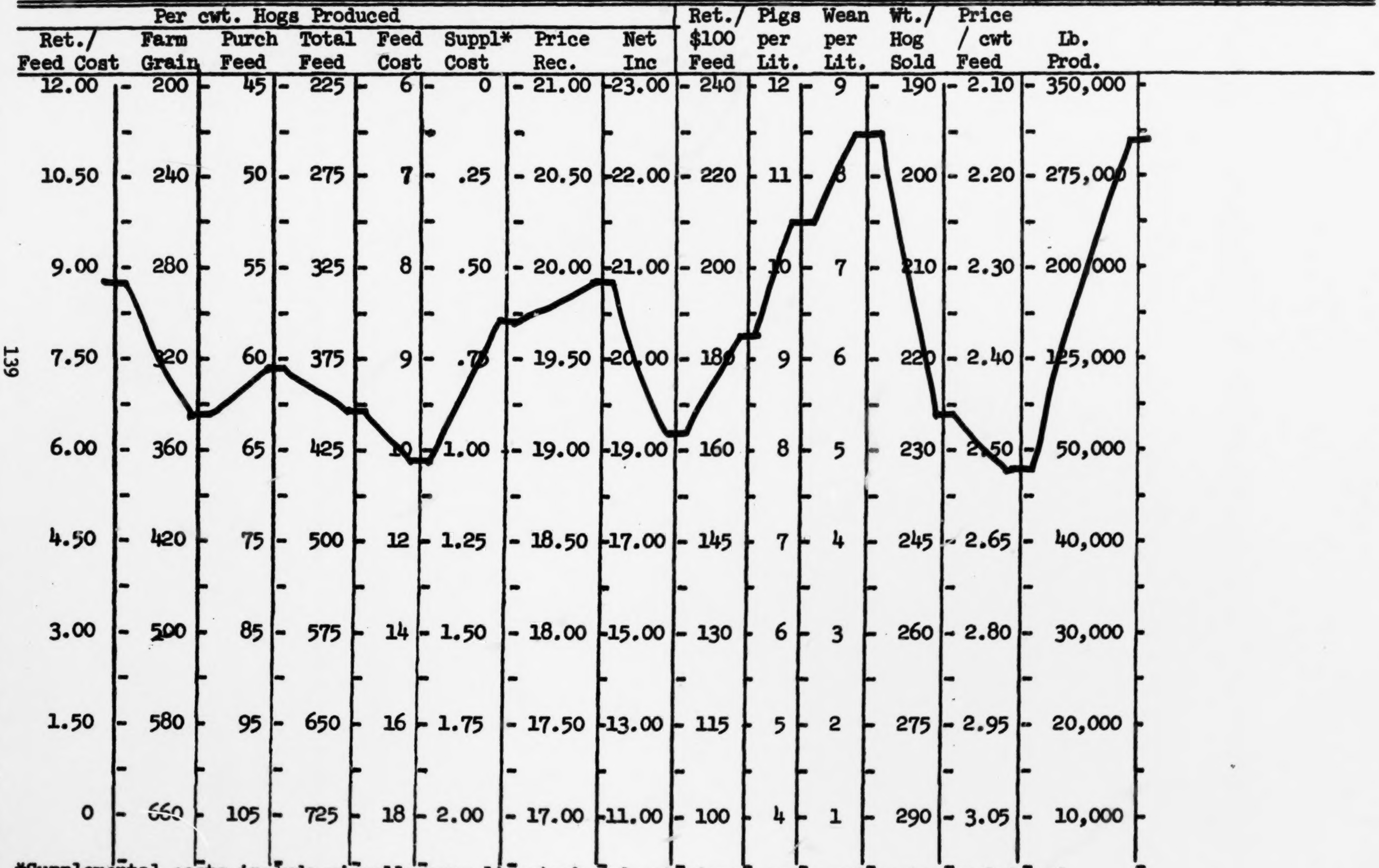
Name Hogs No. 10

Comparison of Faribault Complete Hog Enterprises - 1968 - by Factors

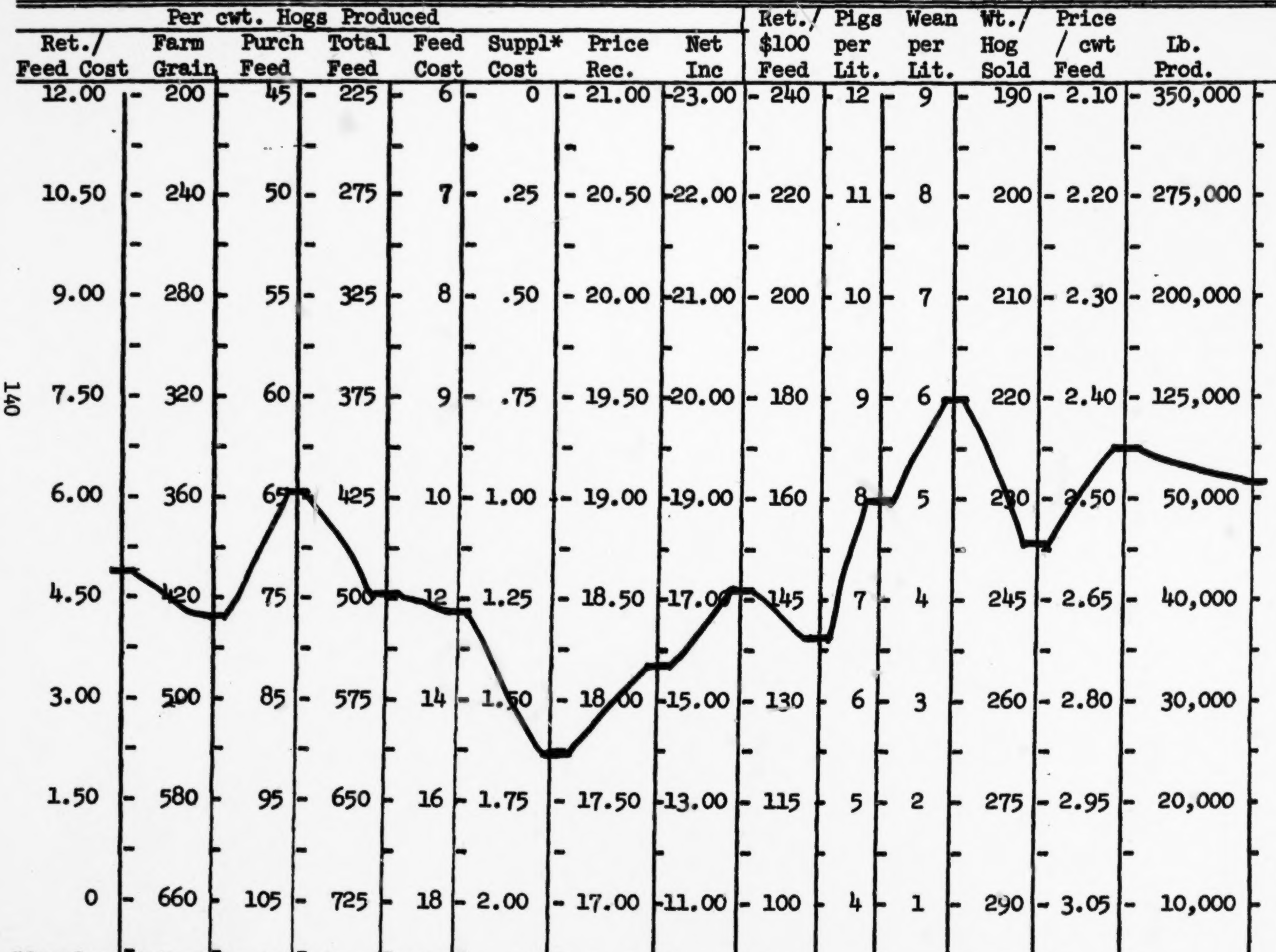


*Supplemental costs include miscellaneous livestock and veterinary costs and custom work hired.

Faribault Area Vocational-Technical School
Agriculture Department 4/69

Name Hogs No. 30

Comparison of Faribault Complete Hog Enterprises - 1968 - by Factors



Ret./ Feed Cost	Per cwt. Hogs Produced Farm Grain	Purch Feed	Total Feed	Feed Cost	Suppl* Cost	Price Rec.	Net Inc	Ret./ $100 Feed	Pigs per Lit.	Wean per Lit.	Wt./ Hog Sold	Price / cwt Feed	Lb. Prod.
12.00	200	45	225	6	0	21.00	23.00	240	12	9	190	2.10	350,000
10.50	240	50	275	7	.25	20.50	22.00	220	11	8	200	2.20	275,000
9.00	280	55	325	8	.50	20.00	21.00	200	10	7	210	2.30	200,000
7.50	320	60	375	9	.75	19.50	20.00	180	9	6	220	2.40	125,000
6.00	360	65	425	10	1.00	19.00	19.00	160	8	5	230	2.50	50,000
4.50	420	75	500	12	1.25	18.50	17.00	145	7	4	245	2.65	40,000
3.00	500	85	575	14	1.50	18.00	15.00	130	6	3	260	2.80	30,000
1.50	580	95	650	16	1.75	17.50	13.00	115	5	2	275	2.95	20,000
0	660	105	725	18	2.00	17.00	11.00	100	4	1	290	3.05	10,000

*Supplemental costs include miscellaneous livestock and veterinary costs and custom work hired.

of hogs.

B. Feed used to produce 100 lbs of hogs.

1) Corn
2) Small grain
3) Protein, salt and mineral
4) Complete ration

C. Cost of feed used to produce 100 lbs. of hogs.

1) Concentrates
2) Pasture

D. Returns above feed per 100 lbs. of hogs produced.

E. Supplementary costs.

F. Returns for $100 of feed.

G. Price received per 100 lbs. of hogs sold.

H. Management factors.

1) Number of litters farrowed
2) Number of pigs born per litter
3) Number of pigs weaned per litter
4) Per cent death loss
5) Average weight of hogs sold
6) Price per cwt. concentrate fed

I. Supplementary data:

1) Complete hog enterprise performance, 1968 - by farms
2) Hogs No. 10
3) Hogs No. 30

2. Suggested Teaching Activities and Experiences:

Discuss the items shown under "subject content". Have the families refer to the average, most profitable and least profitable groups in table 10A of the latest analysis report. Illustrate how total value produced is calculated and point out that this figure should correlate fairly well with price received per cwt. if inventory weights and values have been accurately estimated. Discuss all other points under "subject content" while families follow along on their own analysis report.

When discussing cost of feed, point out that differences in cost may be a result of "peddled" feeds or other over priced feeds as compared with those from local retail feed establishments.

Discuss the "break even" point of "return per $100 of feed". In 1968 this break even point was about $140 return for each $100 of feed when $1.50 per hour of labor was assumed. It will be necessary to make this calculation each year. Using local records, show how time of marketing, weight of hogs sold and quality of hogs influences price received per 100 pounds of hogs sold.

Using the analysis report, show the high correlation between the number of pigs per litter and return above feed cost. Have each family refer to Table 11A of the analysis report to see how the size of the hog enterprise influences the total returns above feed cost for the enterprise.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Documentation for Farm Business Record Analysis.

Part IV - How Do You Interpret The Factors of Costs and Returns for Other Livestock Enterprises?

1. Subject Content:

   A. Feed costs and returns from hog finishing enterprise.

   B. Feed costs and returns from weaning pig enterprise.

   C. Feed costs and returns from beef breeding cattle.

   D. Feed costs and returns from feeder cattle

   E. Feed costs and returns from sheep flock.

   F. Feed costs and returns from laying flock chickens.

2. Suggested Teaching Activities and Experiences:

The principles used in interpreting the returns and efficiencies for all enterprises are very similar to those used in dairy cattle and hogs. For this reason, a detailed explanation is not being given here for each separate enterprise. In each livestock enterprise the amounts of the various feeds, as well as the value of these feeds becomes the basis for the study. Page 10 of the analysis report shows the proportion of the total cost represented by feed. This is the main factor in determining the return needed for each $100 of feed to cover all costs. The size of the enterprise is very important when evaluating its effect on a total farm business. An extremely profitable small enterprise may not add as much to farm earnings as a larger enterprise of moderate profitability.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

B. Documentation for Farm Business Record Analysis.

Part V - Suggested On-Farm Instruction Activities.

Review the enterprise analysis for each class of livestock on the farm. Ask family to recall (or find) the estimates they made previously of the production and efficiency of each enterprise. Compile a list of the management practices that should be reviewed for each enterprise. Note changes in practices that have been made and are now in use. Help to determine the break-even point for return over feed cost for each enterprise. Check the current livestock numbers report for accuracy.

UNIT II - X

EVALUATION OF THE FARM BUSINESS

Teacher Objectives:

1. To furnish the opportunity and a method for farm families to evaluate their farm business and evaluate the use that has been or is being made of past analysis reports.

Part I - Where Are the Strengths and Weaknesses of Our Business?

1. Subject Content:

Farm families who have had an analysis of their farm business will need encouragement to study and to make adjustments in their businesses as suggested by the report. This unit is designed to put the family in a position of self evaluation. They must tell themselves what is strong and what is weak about their business - what they could do to take advantage of this knowledge - what they did to take advantage of it and what adjustments or investments were made that were contrary to analysis indications. An analysis report that does not lead to some action on the part of the farm family is not of great value.

2. Suggested Teaching Activities and Experiences:

The following worksheet, with space provided for the responses, should be filled in by the farmer and his wife, together. It would be helpful for the instructor to indicate to the families where to look in the analysis report for ideas on the various responses. Direct answers to all of the responses will not be found in the analysis report, but general weaknesses within the report may suggest needed improvement. It may be worthwhile for the family to decide for themselves that their weed control is not satisfactory or that they are not getting things done in a timely manner.

WORKSHEET

Name______________________________
Date______________________________

Evaluation Of The Farm Business

1. WHAT ARE THE STRONG POINTS OF OUR BUSINESS?

   A. What can we do to take advantage of these strong points?

   B. What have we done?

2. WHAT ARE THE WEAK POINTS OF OUR BUSINESS?

   A. What can we do to strengthen these points?

   B. What have we done to strengthen or eliminate the weak points?

3. EVALUATION OF OUR FARM BUSINESS

	Weak	Satisfactory	Very Good
Size of business			
Livestock production			
Crop selection			
Crop yields			
Fertilizer			
Weed control			
Labor efficiency			
Machinery costs			
Cost control			
Feed costs			
Roughage program			
General timeliness			
Household spending			

4. Changes in practices, enterprises, machinery, building or equipment additions that your analysis report did not indicate or that your analysis report indicated should not be done:

5. Unusual circumstances in last year's analysis that would not give a true average picture of the farm business or family spending. (Weather, disease, inventory errors, low prices, etc.):

After each family has completed the worksheet, a general class discussion can be held regarding the uses of an analysis report. This unit furnishes a good opportunity to remind families that records or the analysis report is worth very little unless it is used.

3. References:

A. Individual families analysis reports.

Part II - Suggested On-Farm Instruction Activities:

Review the worksheet "Evaluation of the Farm Business" used in the preceeding class. Ask the family to examine the list of activities they prepared early in the year (Unit IV). Discuss ways in which they plan to respond to the indicators of needed business improvement.

UNIT II - XI

INCOME TAX PLANNING AND MANAGEMENT

Teaching Objectives:

1. To teach families how to minimize income taxes through the use of an income tax estimate and careful tax management.

   This teaching unit is very similar to teaching Unit XII, Earm Management I.

   More empahsis will be placed on the acceleration or delay of sales and purchases to minimize the fluctuation of income from one year to the next.

   Since the procedure for making an income tax estimate is exactly the same from one year to the next, a special teaching unit has not been developed for Farm Management II.

   The instructor may wish to gather material to show by several examples how income may be shifted from one year to another for the purpose of minimizing taxes.

2. References:

   A. Income Tax Management for Farmers.

   B. "Form F.M. 7", Minnesota Farm Account Book.

   C. Farmers' Tax Guide.

   D. Minnesota Farm Account Book.

   E. References from "Farm Income Tax Short Course."

3. Suggested On-Farm Instruction Activities.

   On-farm instruction for income tax planning and management may be done similar to the procedure used in Unit I. Assist in compiling an estimate of tax liability and planning sales and purchases to manage the extent of this liability. Instruction should also be given in closing out the record for analysis using the same procedures suggested for the previous year. The records on crop production and yields may be checked and adjusted at this time as well as a preliminary check of livestock number accuracy (F.A. 12).

UNIT II - XII

CLOSING THE MINNESOTA FARM ACCOUNT BOOK FOR ANALYSIS

Teacher Objectives:

1. To close out the Minnesota Farm Account Book and prepare the supplementary forms for analysis.

   This teaching unit is exactly the same as teaching Unit XV, Farm Management I. Special classes for the year-end inventories and the Crop and Feed Check will not be held in Farm Management II. For this reason, this teaching unit may also include questions and discussion on teaching units XIII and XIV, Farm Management I.

   A scheduled farm visit will also be necessary to assist each family with the final preparation and checking of the account book before it is sent to the analysis center.

2. References:

   A. "Checklist for Closing the Minnesota Farm Account Book".

   B. "Supplementary Information", F. A. 51, Area Analysis Center.

   C. Minnesota Farm Account Book.

   D. "Livestock Report", F. A. 12, Area Analysis Center.

   E. "Crop and Feed Check", F. A. 11, Minnesota Farm Account Book.

3. Suggested On-Farm Instruction Activities.

   Close the account for analysis. Review inventories for accuracy of both quantity and price. Complete a cash check as a final measure of record accuracy. Close out should include: Check list for closing the account, crop and feed check, livestock report, supplementary information and cash check.

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Vocational Agriculture Farm Analysis, Annual Report, Austin, Minn.: Austin Area Voc -Tech.School, 1968.

Your Federal Income Tax, Edition for Individuals, Pub. No. 17, Washington, D.C., Internal Revenue Service.

CHAPTER VII

FARM MANAGEMENT III - FARM BUSINESS REORGANIZATION

The continuation of families into Farm Management III or Farm Business Reorganization will necessitate no radical changes in the program. This advancement into a third year of adult farmer education follows the preceding instruction in such a natural way that families will not be especially aware of the intensive study which they are making of their business.

These families have been meeting together for more than two years. They are very likely to offer discussion and present problems to the group that would have been strictly personal problems when they first entered the program. For this reason, the families are likely to add more flexibility to the instruction as the year progresses. On-farm instruction will also become more flexible and individualized as some of the families begin to make changes in their business as a result of the two-year study. To some families, adjustments or changes in management practices will be major accomplishments. Others will already be considering major changes in cropping and livestock organization. The job of the vocational agriculture instructor should never be that of retarding progress. In this third year of farm management, some families may think they are ready for major changes in livestock enterprises when in reality they should do a great deal more investigation and planning before reorganization is undertaken. The instructor should strongly urge these families to complete the planning before beginning any major changes.

Each instructor may wish to change the empahsis during this third year. His community is different from any other and each of the farm management groups within the same community may also have different interests and different approaches to their own problems. Whatever the empahsis, it is important that the instruction remain systematic and well planned.

UNIT III - I

ATTRIBUTES OF SUCCESSFUL FARMERS

Teacher Objectives:

1. To create an awareness in the families that there are differences between good and bad farmers.

Part I - What Are the Differences Between Successful and Unsuccessful Farmers?

1. Subject Content:

The growing complexity of modern farming places more and more emphasis upon the ability of the man. Landlords and their farm managers are seeking the best tenants. Parents want to pass the home farm on to the son or son-in-law who is best qualified to operate it. Bankers and other creditors want help in evaluating the personal characteristics of prospective borrowers. Agriculture teachers want to encourage their best qualified students to seek careers in farming. Farm families may wish to evaluate themselves to determine what changes they might make for self improvement.

A study of farm operators in Illinois produced a series of items used by farmers and farm leaders in describing good and poor farmers. Those items with the highest discriminatory power were correlated with the labor and management earnings of a sample of account keeping farmers.

Among the items that were found to be most characteristic of high-ranking farmers, and also least characteristic of low-ranking farmers, were the following indicators of personal attributes:

Takes pride in his farm and his work
Ambitious
A good manager
Plans his work

On time with his work
Financially successful
Builds up his soil
Progressive
Good business judgement
Enjoys working with livestock
Decides what is important and then does it
Buildings are well kept
Thrifty
Has the know-how for modern farming
Well informed about farming
Spends money wisely
Keeps his place neat
Profits by experiences of others
Thinks things through before taking action

Among the items that were found to be most characteristic of low-ranking farmers, and also least characteristic of high-ranking farmers, were the following personal attributes:

Easy going
Just a poor manager
Does not keep good farm records
Farmstead messy and unkept
Farms in a haphazard fashion
Knows about new methods, but uses old ones
Needs a boss
Poor training as a boy
His crops are weedy
Satisfied with just enough to get by
Lacks vision
Slow in getting up-to-date in his farming
Does not get things done

The fifteen items that showed the highest correlation between rating scores on the operator and his labor and management earnings are listed below in order of degree of correlation:

1. Not interested in farming (negative correlation)
2. Uses limestone when needed
3. Poor training as a boy (negative correlation)
4. Makes good investments
5. Well informed about farming
6. Satisfied with just enough to get by (negative correlation)
7. Takes pride in his farm and his work
8. Uses fertilizers and phosphate
9. Reads and studies farm publications
10. Raises hogs on clean ground
11. Has a love for farm work and farm life
12. Just a poor manager (negative correlation)
13. Financially successful

14. Industrious
15. Does not understand farming (negative correlation)

2. Suggested Teaching Activities and Experiences:

Introduce this unit by pointing out that people generally have farmers classified as good farmers or poor farmers. Have the farmer and his wife work together and list under the heading, "good", all of the things they think of as being characteristic of good farmers. Have them list under the heading, "poor", all the things they think of as being characteristic of poor farmers. Point out that these might be attitudes, (how the farmer thinks), behavior, (how the farmer acts), or anything else that may classify him as good or bad.

During discussion list the characteristics of good farmers in one column on the chalkboard and the characteristics of poor farmers in another column. This discussion will be very worthwhile because families cannot discuss these items without consciously or unconsciously putting themselves into some of the categories. This list may be supplemented by those included under subject matter which have not been suggested by families.

Call attention to the survey done at Illinois correlating these attributes of good and poor farmers to earnings. Pass out a list of these attributes in order of degree of correlation and have each family check any of the items that may apply to themselves. A question may be raised as to why keeping records is not included in the correlation list. Only families with records were included in this study - therefore no correlation could be determined.

Even though the study on which this unit is based is rather old, it does point out the fact that there are differences among farmers in their backgrounds, their attitudes and the farming practices carried out. One of the differences not brought out in this study, perhaps because it is not possible to observe, is the selection and combination of livestock and crop enterprises. There are many possible combinations from which a farmer can choose. The specific combination that he chooses should be dependent on the resources available and be consistent with the personal goals of the farm operator and his family. Illustrations of income differences are shown in Economic Information Report, R68-6, 1967 Minnesota Farm Business Summary by Type of Farming, Nodland and Persons, University of Minnesota, St. Paul, Minnesota, 1968. The instructor may wish to supplement this unit from the above report or he may wish to develop the major part of a lesson unit from the report and supplement it with the material shown under "subject content" of this unit.

3. References:
   - A. Attributes of Good and Bad Farmers.
   - B. Getting Started in Farming.
   - C. 1967 Minnesota Farm Business Summary.
   - D. Farm Management Principles, Budgets, Plans.

Part II - Suggested On-Farm Instruction Activities.

Review the attributes of good and poor farmers with the family. Ask them to estimate their relative standing in the group of farms having records analyzed, in regard to income, production levels, and enterprise efficiency. Review their operation plan for the coming year. Help review their family goals and urge revisions if necessary. Inquire to determine if the family has completed their opening inventory.

UNIT III - II

DETERMINING THE MOST PROFITABLE LEVEL OF PRODUCTION

Teacher Objectives:

1. To teach families a method of determining the optimum level of production.

Part I - What Is the Most Profitable Level of Production?

1. Subject Content:

   A. Determining the marginal product with fixed machinery and variable labor.

Number of Labor Units	Quantity of Product	Product Per Unit of Labor	Marginal Product
1	5	5	XXXX
2	12	6	(7)
3	21	7	(9)
4	32	8	(11)
5	45	9	(13)
6	60	10	(15)
7	77	11	(17)
8	84	10.5	(7)
9	88	9.8	(4)
10	90	9.0	(2)
11	90	8.2	(0)

1) Where is the maximum production per unit of labor?
2) At what point are costs of production the lowest?
   a) This depends on cost of production.
   b) Probably not at point of maximum production.

B. Determining the marginal costs with increasing units of labor at $4 per unit and fixed costs of $50.

Quantity of Labor Units	Fixed Costs	Total Costs	Total Product	Average Costs	Marginal Cost of Unit
1	50	54	5	10.80	XXXX
2	50	58	12	4.83	($.57)
3	50	62	21	2.59	($.44)
4	50	66	32	2.06	($.36)
5	50	70	45	1.56	($.30)
6	50	74	60	1.23	($.27)
7	50	78	77	1.01	($.24)
8	50	82	84	.97	($.57)
9	50	86	88	.98	($1.00)
10	50	90	90	1.00	($2.00)
11	50	94	90	1.44	($4.00)

1) At what point does the operator have the highest profit?
    a) When marginal cost is equal to marginal return.
    b) In agriculture, marginal return is equal to the price of the product.
2) If the price of the product is $1.00, what is the most profitable level of production?
3) If the price is $1.50, what is the most profitable level of production?
4) If the price is $3.00, what is the most profitable level of production?
5) What is the most profitable level of production with labor at $6.00 per unit and ....
    a) Price of product $1.00?
    b) Price of product $1.50?
    c) Price of product $2.00?

C. Determining the most profitable level of grain feeding with grain at $2.00 per cwt. and milk at $3.00 per cwt.

Grain Feeding	Grain Cost	Other Cost	Total Cost	Milk Production	Average Cost per 100#	Marginal Cost/$100
1000#	($20.00)	$150	(170)	6000#	($2.83)	XXXX
1500	($30.00)	150	(180)	7500	($2.40)	(.67)
2000	($40.00)	150	(190)	8500	($2.23)	(1.00)
2500	($50.00)	150	(200)	9000	($2.22)	(2.00)
3000	($60.00)	150	(210)	9300	($2.25)	(3.33)
3500	($70.00)	150	(220)	9500	($2.31)	(5.00)
4000	($80.00)	150	(230)	9600	($2.40)	(10.00)

1) What would be the most profitable level of production if the price of milk is $4.00?

2. Suggested Teaching Activities and Experiences:

Begin this unit by raising the question, "What is the most profitable level of production - maximum production per acre or production per animal? At the lowest cost per unit of production? When the output is greatest per man? When the production is greatest per unit of feed?"

After discussing these questions in a general way, turn to problem "a" under "subject content". Have each family determine the marginal product for the varying units of labor. From this they can determine the optimum production per unit of labor but cannot determine the most profitable level without knowing cost.

Have each family determine the marginal costs with increasing units of labor (problem "b"). Discuss the most profitable level of production with the price of the product at $1.00, $1.50 and

$2.00. Empahsize marginal cost and marginal return, illustrating that marginal return and price of the product are equal in an agricultural market.

Have each family determine the total cost, average cost and marginal cost with labor at $6.00 per unit. Discuss the most profitable level of production with price at $1.00, $1.50 and $2.00.

Have each family work out the average cost of producing 100 pounds of milk at varying levels of grain feeding (problem "c") and the marginal cost of producing 100 pounds of milk. Discuss the most profitable level of production (grain feeding) with milk at $3.00 per hundredweight and milk at $4.00 per hundred-weight.

3. References:

   A. Farm Management Workshop.

   B. Farm Management Economics.

   C. Getting Started in Farming.

   D. Farm Management Principles, Budgets, Plans.

Part II - Suggested On-Farm Instruction Activities.

Assist in compiling a table of the most profitable level of production for one or more of the farm enterprises. Using the analysis reports for the previous two years, attempt to establish the break-even points for these enterprises. Encourage activity that aids in establishing the rates of marginal return by planning demonstrations in crops and livestock.

UNIT III - III

SELECTION OF ENTERPRISES

Teacher Objective:

1. To begin teaching families how to determine the combination of enterprises that will result in the greatest profit.
2. To illustrate the principle of competitive enterprises and to apply the principle to a farm business.

Part I - How Do We Select the Most Profitable Enterprises?

1. Subject Content:

A. Competition for land.

1) Present cropping program.

Crop	Acres	Yield	Production	Price	Value	Work Units
Corn (grain)	65	90/Bu.	5,850 Bu.	$1.05	$6,142.50	35.75
Corn Silage	31	11/T.	341 T.	7.00	2,387.00	24.80
Oats	10	60/Bu.	600 Bu.	.60	360.00	3.00
Hay & Pasture	16	2.5/T.	40 T.	20.00	800.00	9.60
Total	122				$9,689.50	73.15

2) Alternative cropping program.

Crop	Acres	Yield	Production	Price	Value	Work Units
Corn (grain)	122	90	10,980	$1.05	$11,529	67.10

B. Competition for other resources

1) Labor
2) Capital
   a) Buildings
   b) Investment in livestock
   c) Cash costs
3) Present livestock program

	Bushels Corn Used	Total Value Produced	Total Feed Cost	Return Over Feed	Work Units
25 Dairy Cows*	1,750	$10,126	$6,993	$3,133	235**
632 cwt. Hogs Produced	4,001	13,297	6,225	7,072	76
	5,751	$23,423	$13,218	$10,205	311

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*Dairy cows and her replacements.

**9.4 work units assumed for cow and replacements.

4) Alternative livestock program.

	Bushels Corn Used	Total Value Produced	Total Feed Cost	Return Over Feed	Work Units
1734 cwt. Hogs Produced	10,980	$36,483	$17,080	$19,403	208

C. Comparison of present and alternative plans.

	Total Value	Work Units
Present Plan Crops	$ 9,689.50	73
Present Plan Livestock	10,205.00	311
	$19,894.50	384
Alternative Plan Crops	$11,529.00	67
Alternative Plan Livestock	19,403.00	208
	$30,932.00	275
Difference	+$11,037.50	-109

2. Suggested Teaching Activities and Experiences:

Prepare a handout showing the present and alternative crop and livestock programs as well as the comparison of the present and alternative plans. Prepare visuals to be used with the overhead projector, of these same materials.

Discuss the economic principle of enterprise combination calling attention to independent, competitive, complimentary, and supplementary relationships. Point out that only the competitive relationship is to be emphasized in this lesson.

Use the data from an actual record from a 1968 farm business analysis to show that the crops now being grown are all in competition for land and in some respects for labor and capital. Bring out that the best use of the resource land will be that which gives the highest return. During the discussion, it will be brought out that costs of production have not been taken into account. Point out that a detailed cost of producing crops could be used but that gross return per acre is the best single measure of evaluating the potential profit of a cropping program. The data shows that the alternative cropping program gives over $1,800. more gross return with less labor and without the need for machinery for silage, small grain and hay production.

Using the data on present and alternative livestock programs show that dairy and hogs are in competition for corn, buildings, investment in livestock and labor. Under the efficiency levels of this farm business, the hog enterprise is making the best use of all of these resources. Show how material has been drawn from the analysis report and used as this example. Suggest to the families that they can draw similar data from their reports to evaluate their own enterprise .

Using a visual comparison of present and alternative plans, show that the alternative plan gives over $11,000 more adjusted gross income with over 100 days less labor. The optimum combination of enterprises will be that which gives the highest net income when all resources are considered. A more detailed budget would have to be developed to determine the capital needs of the alternative enterprise. The cost of making the transition including loss of income during the transition must also be calculated.

Conclude the lesson by pointing out that a method of comparing enterprise combinations has been explored here and that this is only the beginning stages of planning for a possible reorganization.

3. References:

   A. Farm Management Economics.

   B. Documentation for Farm Business Record Analysis.

   C. Farm Management Principles, Budgets, Plans.

Part II - Suggested On-Farm Instruction Activities:

Discuss any questions the family has about their analysis report. Review the opportunity cost principle as it relates to the enterprises on their farm. Examine any plans the family has for organizing the business and be prepared to suggest the study of feasible alternatives.

UNIT III - IV

WHAT DO TWO YEARS RECORDS MEAN?

Teacher Objectives:

1. To teach families the increasing significance of the second year's farm business analysis.

Part I - What Does the Second Year's Record Show?

1. Subject Content:

   A. Does the second year's record tell more than the first?

      1) Increased experience makes some records more likely to be reliable.
         a) Inventories may be more accurate.
         b) Feed records may be more accurate.
      2) Value of two consecutive year's records
         a) Unusual economic or production pressures may be evened out.
         b) Changes may become evident.
         c) Trends will begin to be evident.

Comparison of Capital Investment

Operator's Share	Jan. 1, 1967	Jan. 1, 1968	Jan. 1, 1969
Total Livestock			
Crop, Seed & Feed			
Total Power, Machinery			
Land			
Buildings, Fences, etc.			
Total Farm Capital			
Non-Farm Assets			
Dwelling			
Total Assets			
Real Estate Debt			
Chattel Mortgages			
Notes			
Accounts Payable			
Total Liabilities			
Farmers Net Worth			
Gain in Net Worth	XXXX		

Comparison of Receipts, Expenses and Income

	1967	1968
Returns and Net Increases		
Productive Livestock		
Dairy Cattle		
Other Dairy Cattle		
Beef Breeding Cattle		
Feeder Cattle		
Complete Hog Enterprise		
Hog Finishing Enterprise		
Producing Weaning Pigs		
Farm Flock Sheep		
Feeder Lambs		
Chickens (Including Hens & Broilers)		
Turkeys		
Other Productive Livestock		
All Productive Livestock		
Value of Feed Fed to Livestock		
Return Over Feed from Livestock		
Crop, Seed and Feed		
Income from Labor Off the Farm		
Cooperative Patronage Refunds		
Miscellaneous Farm Income		
Total Returns & Net Increases		
Expenses and Net Decreases		
Truck and Auto (Farm Share)		
Tractors and Crop Machinery		
Electricity		
Livestock Equipment		
Buildings, Fences & Tiling		
Bare Land		
Miscellaneous Livestock Expense		
Labor		
Labor Charge for Other Operator(s)		
Property Tax		
General Farm Expense & Telephone		
Interest on Farm Capital		
Interest Paid (From Table 6B)		
Total Expenses & Net Decreases		
Labor Earnings (Whole Farm)		
Labor Earnings (Operator's Share)		
Return to Capital & Labor		

2. Suggested Teaching Activities and Experiences:

Discuss the increased reliability of inventories and feed records. Improvements will result from the experience of doing these tasks a second time and perhaps profiting from errors of the first year. Having two consecutive years of records also tends to even out differences that may have resulted from unusual circumstances. Even though the second year's record may be more reliable because of increased accuracy, the big advantage comes from having two consecutive records and analyses of the same items.

Have each family fill in their figures on the "comparison of capital investment" form. There are actually three comparisons because the beginning inventory of the first year's record is also the ending inventory of the previous year. Families may wish to make a more detailed study of inventory changes to show further trends within the farm capital inventory.

Have each family fill out the "comparison of receipts, expenses and income" form. Differences in income and expense items should then be discussed. Since some of this information is taken from Table #3 and some from 6A and 6B, a good opportunity is afforded to discuss the differences between these two tables and Tables 2A and 2B. There is sometimes confusion as to why these tables are not the same. It is extremely important for the family to understand why it is necessary to consider the whole farm business to evaluate tenure arrangements and to measure progress of the operating family. The "summary of earnings by years" data in the farm analysis will be very helpful in determining and discussing trends in receipts, expenses and earnings.

This unit may be summarized by pointing out that each year of analysis becomes more important than the last because of the accumulation of data. Next year's analysis will be the beginning of information upon which to base major reorganization of the farm business.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Documentation for Farm Business Analysis.

Part II - Suggested On-Farm Instruction Activities.

Look for trends in the farm business. Be alert for consistant improvements in production levels and enterprise efficiency. Relate the results of two years of analysis to plans the family has for organizational change. Help to compile a list of general management practices that need to be reviewed. Have the family check their relative position in the group in earnings, production and enterprise efficiency against the estimates they made previously.

UNIT III - V

ANALYZING THE CROPPING PROGRAM

Teacher Objectives:

1. To teach families how to evaluate their crop yields.
2. To teach families how to evaluate their crop costs.
3. To teach families how to evaluate the over-all efficiency of their cropping program.

Part I - How Do Crop Yields Compare With Others and With Last Year?

1. Subject Content:

	Average 1968	Our Farm 1967	Our Farm 1968
A. Index of crop yields	100		
B. Crop production			
1) Yield of Corn (grain)			
2) Yield of Corn(silage)			
3) Yield of Oats			
4) Yield of Wheat			
5) Yield of Alfalfa Hay			
6) Yield of Soybeans			

C. Comparison with other farms in class.

1) Yield graph of common crops (see attachment).
    a) Supplementary Crop Analysis by Factors, 1968.

2. Suggested Teaching Activities and Experiences:

Provide each family with a worksheet to record the crop yield index and the raw yields of the common crops in the community. Have each family record information from the past two analysis reports on this worksheet for an easy comparison with the average for this year and their own information for last year. Supply each family with a form similar to "Supplementary Crop Analysis - By Factors, 1968" and have each mark its own yield levels under the appropriate crops and draw connecting lines to form a graph. (See attached graph). The recording of this information will

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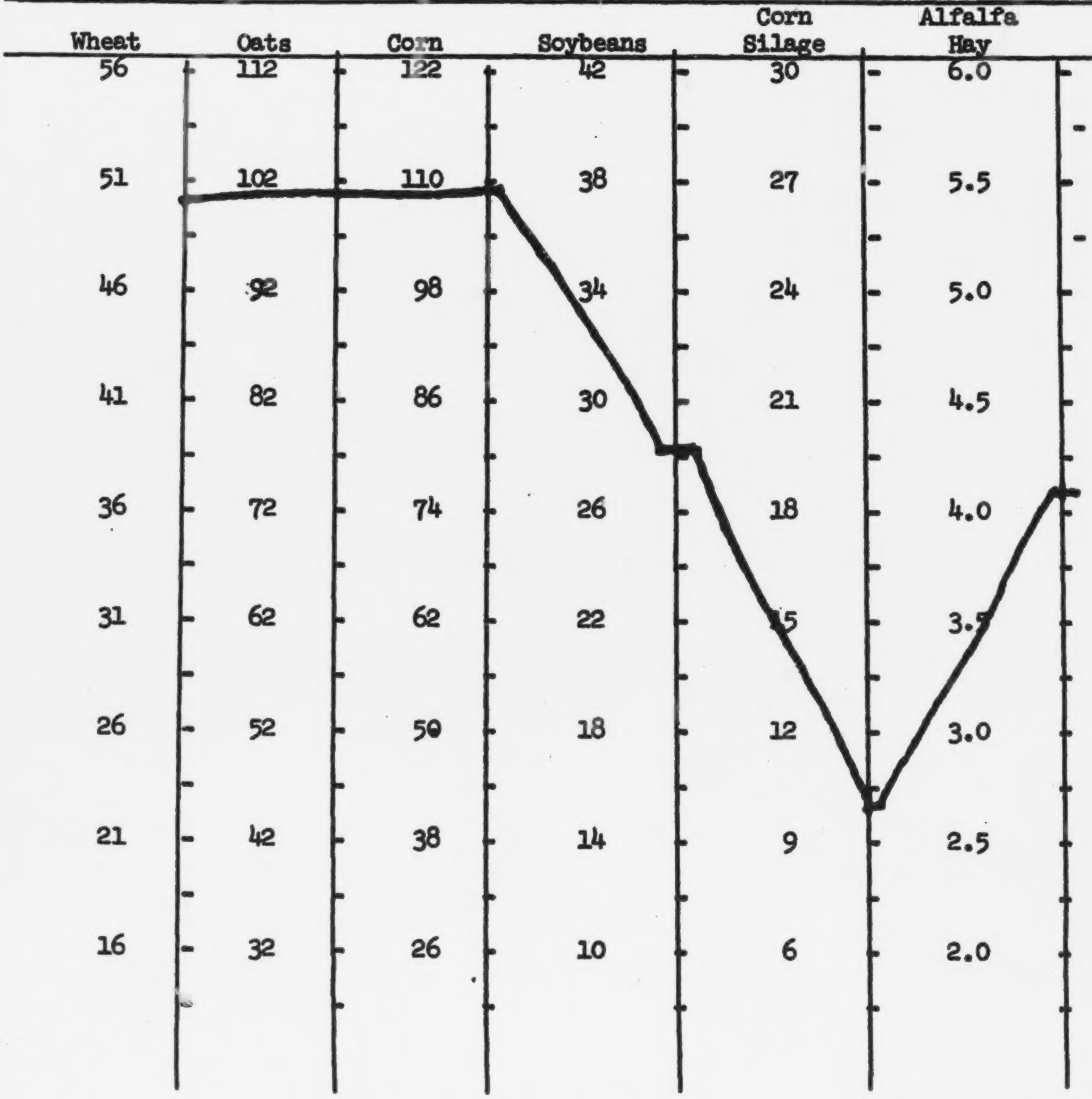
Supplementary Crop Analysis - by Factors, 1968



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Yields, Costs and Returns - Selected Crops - 1968

CORN				BEANS				ALFALFA HAY			
Yield	Suppl. Cost.	Alloc. Cost	Return over Cost	Yield	Suppl. Cost	Alloc. Cost	Return over Cost	Yield	Suppl. Cost.	Alloc. Cost.	Return over Cost
1. 122	30	39	53	32	8	36	33	4.3	15	40	31
2. 119	31	46	43	28	12	42	14	4.0	13	47	20
3. 118	41	47	30	33	9	43	28	4.1	15	49	18
4. 116	40	44	31	38	15	41	35	3.4	14	46	8
5. 115	35	38	43	22	13	36	5	3.9	11	39	28
6. 115	33	50	32	31	5	46	23	4.5	14	52	23
7. 113	42	39	31	23	20	37	-2	3.7	5	41	28
8. 113	24	41	48	28	8	38	21	5.3	--	42	64
9. 112	40	39	32	--	--	--	--	5.1	14	41	47
10. 111	40	32	39	32	5	31	40	--	--	--	--
11. 110	44	44	22	--	--	--	--	3.0	--	46	14
12. 110	20	42	48	32	12	39	25	3.1	4	44	15
13. 109	32	43	34	29	21	40	8	4.1	10	45	28
14. 109	54	52	2	23	27	47	-20	2.4	41	30	-23
15. 108	34	40	33	31	6	38	30	--	--	--	--
16. 108	34	41	33	--	--	--	--	2.9	4	42	12
17. 108	62	45	--	24	18	41	-2	3.8	6	47	23
18. 107	32	37	39	30	3	35	35	4.4	14	38	36
19. 107	32	37	37	22	8	35	9	--	--	--	--
20. 106	24	41	41	23	5	38	11	3.7	14	43	18
21. 104	44	41	19	20	6	38	3	--	--	--	--
22. 104	38	41	24	30	5	38	28	3.4	7	43	18
23. 103	31	43	29	--	--	--	--	2.4	12	45	-9
24. 103	43	40	20	28	7	38	23	3.3	13	42	11
25. 102	37	47	19	32	4	43	30	3.0	32	49	-21
26. 101	39	43	19	24	21	40	-4	3.1	4	44	14
27. 101	51	36	14	28	8	34	25	--	--	--	--
28. 100	36	42	22	25	7	39	14	4.8	9	44	44
29. 100	40	45	15	--	--	--	--	4.7	14	47	33
30. 100	42	36	22	25	19	34	7	3.0	16	37	7
31. 100	35	55	10	32	20	50	6	3.8	38	58	-20
32. 100	42	36	21	24	22	34	2	2.3	4	37	4
33. 99	34	40	25	32	25	37	15	1.6	18	42	-28
34. 98	35	56	7	25	9	50	1	3.9	15	59	5
35. 97	32	45	21	23	10	41	5	5.4	13	46	49
36. 97	28	43	26	--	--	--	--	4.2	9	45	30
37. 97	22	46	29	21	--	42	7	2.5	--	48	2
38. 96	30	46	19	27	11	42	13	2.5	8	48	-7
39. 95	44	40	11	20	13	38	-4	2.7	11	42	1
40. 95	57	50	-12	23	17	45	-7	--	--	--	--
41. 95	48	38	10	31	20	35	30	--	--	--	--
42. 94	30	50	14	48	36	46	33	3.6	8	53	12
43. 94	24	38	31	28	4	35	28	3.0	3	39	18
44. 92	40	40	12	26	15	38	10	4.6	12	42	38
45. 92	55	34	3	26	23	32	7	4.2	14	35	35
46. 92	25	34	33	35	8	32	44	2.7	3	35	16
47. 90	46	41	3	--	--	--	--	3.0	8	43	9
48. 90	44	47	-1	19	16	43	-14	3.0	14	49	-3
49. 89	28	43	18	24	6	39	12	2.7	3	44	7
50. 88	31	51	6	--	--	--	--	3.4	7	54	7

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Yields, Costs and Returns - Selected Crops - 1968

CORN				BEANS				ALFALFA HAY			
Yield	Supply Cost.	Alloc. Cost.	Return over Cost	Yield	Supply Cost	Alloc. Cost	Return over Cost	Yield	Suppl. Cost	Alloc. Cost	Return over Cost
51. 88	42	45	1	20	21	41	-15	3.2	9	47	9
52. 87	43	41	2	11	15	41	-29	2.5	4	51	-4
53. 86	30	42	15	28	13	39	14	3.8	10	43	23
54. 86	59	39	-12	31	18	36	20	4.4	2	40	45
55. 85	23	42	20	--	--	--	--	3.6	20	43	9
56. 82	47	39	-3	21	18	36	-5	2.3	--	40	6
57. 82	23	43	16	--	--	--	--	2.6	21	45	-14
58. 82	39	42	1	14	11	39	-17	3.4	14	43	10
59. 82	39	40	3	15	15	38	-17	--	--	--	--
60. 81	31	44	7	26	9	40	13	--	--	--	--
61. 81	25	38	18	27	10	35	18	3.6	9	39	24
62. 78	33	40	5	27	12	37	16	1.8	5	41	-10
63. 78	35	45	-2	--	--	--	--	3.5	3	47	19
64. 77	46	44	-13	--	--	--	--	2.5	26	46	-22
65. 77	38	45	-6	37	8	41	39	3.8	17	47	13
66. 76	27	39	10	27	14	36	15	2.7	4	40	10
67. 75	40	42	-7	--	--	--	--	2.5	33	43	-27
68. 75	29	38	8	18	15	36	-6	--	--	--	--
69. 70	39	46	-15	10	11	42	-30	4.5	18	48	24
70. 67	37	41	-11	--	--	--	--	4.6	16	43	34
71. 62	31	45	-14	20	9	41	-2	3.1	13	47	3
72. 60	28	43	-11	18	2	40	2	4.3	6	45	35
73. 58	35	37	-14	16	9	35	-7	--	--	--	--
74. 57	23	40	-6	24	13	37	8	3.4	7	41	20
75. 54	25	36	-7	22	19	34	--	1.8	20	37	-21
76. 50	45	36	-31	13	12	34	-15	4.1	4	37	41
77. 46	48	38	-40	--	--	--	--	--	--	--	--
78. 45	23	41	-19	21	3	38	10	1.6	5	42	-15
79. 36	18	43	-26	--	--	--	--	3.9	9	46	24
80. 20	36	44	-61	--	--	--	--	3.5	7	46	16

make it easy for each family to see any increase or decrease in yields of individual crops and will make it possible for a comparison of each crop with other class members. Promote some discussion relative to the kind of a crop year experienced and ask each family to indicate why their yields are up or down from the previous year or why they are above or below average. Although index of crop yields has been covered in an earlier unit, it may be well to review the calculation and meaning of the yield index. At this time do not get into a detailed discussion of reasons for yield changes since this will be covered in Part III of this unit.

Now is an appropriate time to remind farmers that the analysis reports can be used as effective tools in evaluating their past decisions. As they review their progress, they should make at least a mental list of the changes they have made in their management practices. Reference should be made to Unit X of Farm Management II as a reminder that they must evaluate their response to analysis information.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

Part II - How Do Crop Costs Compare With Others and With Last Year?

1. Subject Content:

   A. Per acre crop costs.

	Average	Our Farm	
	1968	1967	1968
1) Tractor and Crop Machinery Expense Per Crop Acre			
2) Fertilizer Cost Per Acre			
3) Crop Chemicals Per Acre			
4) Seed & Other Costs Per Acre			
5) Gas, Oil, Grease Per Acre			

   B. Costs of individual crops per acre

	Average 1968	Our Farm 1967	Our Farm 1968
1) Corn for Grain			
a) Fertilizer			
b) Chemicals			
c) Seed & Other			
d) Hired Labor			
e) Custom Work			
f) Total Supplementary Power & Crop Machinery Expense			
g) Land Cost			
h) Miscellaneous Cost			
Total Allocated Costs			
i) Return Over Total Csots			

   2) Repeat table similar to that used in the corn for grain example for the other common crops in the community.

2. Suggested Teaching Activities and Experiences:

Provide the forms suggested under "subject content" and have the families fill in the information as suggested in Part I of this unit. Since these figures are taken from Tables 8, 9, and 10 in the analysis report, it might be well to point this out when instructions are being given. Refer to the "Documentation" to show how power and crop machinery expense per acre is calculated and to show that a residue expense has been set aside for livestock even though these specific costs have not been allocated to livestock. Through discussion, bring out the significance and limitations of the various supplementary and allocated costs. Even though these families are now in their third year of record keeping under this system, it may be well to point out the importance of accurate crop expense and custom work allocation in the Minnesota Farm Account Book.

Completion of Part II of this unit will prepare the families for a full discussion in Part III.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Documentation for Farm Business Analysis.

   C. Using Farm Analysis Information.

Part III - Evaluating the Over-All Efficiency of the Cropping Program.

1. Subject Content:

   A. Comparison of Local Area Cropping Programs, 1968 - by Farms.

   B. Comparison of Local Area Cropping Programs, 1968 - by Factors.

   C. Yield Costs and Returns-Selected Crops - 1968.

   D. Self Evaluation of 1968 Crops.

      1) Were improvements due to:
         a) More favorable weather ________
         b) Improved yields ________
         c) Lower machinery costs ________
         d) Improved fertilizer use ________
         e) Variety selection ________
         f) Improved weed control ________
         g) More suitable tillage ________
         h) Improved insect control ________
      2) Poorer results were due to:
         a) Weather ________
         b) Weeds ________
         c) Insects ________
         d) Disease ________
         e) Poor timing ________
         f) Other ________
      3) What are the strongest features of your cropping program?
      4) What are the weakest features of your cropping program?
      5) What changes are planned for this year to take advantage of strong points or eliminate weak points?

2. Suggested Teaching Activities and Experiences:

Using a transparency with the overhead projector, show how "Comparison of Local Area Cropping Programs-by Farms" can be used by each family to compare the various factors of crop production with other families. Show several examples of strong and weak cropping program graphs on "Comparison of Local Area Cropping Programs-by Factors". This furnishes opportunity to discuss strengths and weaknesses of an individual family's cropping program without revealing the identity of the farm. Any individual farm graphs should be used only to illustrate specific points and never to embarrass a family or ridicule the practices. "Yields, Costs and Returns - Selected Crops" may be used in a manner similar to the first visual to afford families an opportunity to study the results of others which in turn will enable them to better evaluate their own business. All three of these materials should be used as handouts for the families' future reference.

Have each family complete the self evaluation on a form provided. This will be the main tool to bring out discussion on the wide variety of variables that enter into the cropping program. An analysis of the cropping program as suggested in this unit should also stimulate the interest of the families in attending any crops enterprise classes to be offered in the near future.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

B. Individual Farm Business Record Analysis Reports from the local program.

C. Faribault Cropping Program.

D. Documentation for Farm Business Analysis.

Part IV - Suggested On-Farm Teaching Activities.

Help evaluate the effect of changes in cropping practices on crop production and net return from crops. Review the principles of opportunity cost as it affects crop selection. Discuss the implementation of new cropping practices and the criteria by which the successes of these practices will be evaluated.

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Comparison of Faribault Cropping Programs, 1968 - By Farms

Labor Earnings Whole Farm	Net Increases Crop & Feed	Crop Yield Index	Gross Return /A.	Fert Cost /A.	Chem Cost /A.	Seed Other /A.	Gas, Oil Grease /A.	Tractor & Machinery Cost /A.
1. 25475	33816	108	84.83	16.88	8.84	4.53	2.52	13.49
2. 22293	44467	110	77.03	8.45	2.53	3.03	1.06	3.89
3. 20612	14766	118	96.93	12.74	6.83	11.03	4.52	23.43
4. 19690	24555	100	69.31	5.49	.61	4.01	1.81	11.47
5. 18458	17182	124	109.30	25.84	12.58	5.16	2.38	18.77
6. 17681	9148	114	82.21	13.05	3.23	2.89	5.03	20.55
7. 16122	38272	108	75.27	10.16	4.92	4.80	3.81	8.81
8. 15966	22498	124	86.81	9.13	3.98	5.95	2.14	16.44
9. 15029	16391	116	85.89	9.64	.43	7.38	4.70	19.97
10. 14608	21286	113	86.85	8.66	7.52	3.44	4.08	28.87
11. 14531	26562	104	74.60	9.19	2.64	6.85	1.94	14.41
12. 14401	11859	112	86.30	11.63	4.29	6.20	2.15	16.26
13. 14184	17506	123	90.35	11.01	2.49	5.01	4.16	19.89
14. 14134	21692	114	80.69	2.36	2.40	3.71	2.80	16.04
15. 13548	18450	115	82.41	10.06	2.93	3.93	4.50	15.57
16. 13513	11155	114	90.64	13.27	3.93	4.34	3.93	24.92
17. 13420	21942	120	93.59	10.39	2.62	3.28	3.22	15.76
18. 13084	25482	111	75.86	4.58	9.14	7.86	2.47	10.38
19. 12850	16631	127	95.02	6.00	4.61	8.92	3.21	20.17
20. 11626	21399	127	89.57	8.60	1.65	5.33	2.30	10.58
21. 11572	19489	118	86.51	7.99	5.02	4.16	1.51	15.65
22. 11142	13668	118	83.86	5.48	5.83	2.68	3.57	12.50
23. 11039	19576	118	92.54	7.65	4.01	4.62	2.19	11.33
24. 11025	16361	111	72.16	9.25	4.50	3.34	2.10	8.96
25. 10816	9493	98	69.70	5.87	1.69	2.43	1.34	6.82
26. 10647	10621	110	90.72	9.36	6.22	3.87	2.57	19.40
27. 10628	12095	84	74.54	21.43	11.02	7.16	1.93	16.04
28. 10327	25579	100	74.28	9.81	3.49	3.82	1.54	15.48
29. 10059	13362	93	66.48	5.63	1.24	3.71	3.70	13.83
30. 10024	13957	99	71.40	7.57	5.00	3.67	2.90	11.77
31. 9843	10077	89	61.99	6.62	2.24	3.18	3.80	16.20
32. 9804	9813	113	84.58	9.98	5.33	3.72	3.55	20.19
33. 9009	25297	104	70.06	6.29	2.21	4.06	3.29	15.61
34. 8791	6636	100	84.91	16.95	6.11	11.74	2.72	21.84
35. 8263	14359	89	72.09	12.43	5.59	4.50	3.80	15.60
36. 7971	14028	89	74.79	12.66	7.05	5.76	1.95	20.58
37. 7883	12458	111	78.45	8.81	5.53	4.97	2.97	12.97
38. 7612	23745	110	81.24	5.94	4.79	4.23	1.27	9.23
39. 7263	9345	106	75.49	5.40	4.51	5.39	2.40	17.25
40. 7110	10682	87	56.67	8.04	3.47	3.62	3.26	16.55
41. 6891	12118	119	83.80	7.61	5.84	4.33	4.24	14.40
42. 6885	17699	113	86.21	14.27	3.47	5.22	2.91	29.66
43. 6686	8960	103	76.78	9.52	3.55	4.66	2.86	26.88
44. 6531	19343	135	109.52	17.43	5.91	7.27	3.52	17.71
45. 6260	3520	117	68.40	12.92	4.25	3.73	4.11	13.36
46. 6187	8193	89	73.36	18.54	5.43	5.79	4.54	19.98
47. 5936	7937	93	76.14	10.67	4.82	4.96	3.73	21.06
48. 5891	5714	80	60.50	12.62	4.34	3.21	2.82	18.65
49. 5681	14145	117	90.32	9.27	1.92	4.70	4.27	17.97
50. 5529	15243	111	76.53	5.68	5.17	5.94	2.63	19.65

Comparison of Faribault Cropping Programs, 1968 - by Farms, cont'd.

Labor Earnings Whole Farm	Net Increases Crop & Feed	Crop Yield Index	Gross Return /A.	Fert. Cost /A.	Chem. Cost /A.	Seed Other Cost/A.	Gas, Oil Grease /A.	Tractor & Machinery Cost /A.
51. 5357	6545	87	72.47	17.77	5.31	9.59	2.93	19.03
52. 5322	4993	71	49.52	5.70	1.98	2.80	2.16	14.50
53. 5314	13338	83	58.25	5.61	4.69	5.36	1.34	15.77
54. 4683	10681	99	75.08	8.49	3.68	5.51	4.33	15.29
55. 3974	4784	75	51.84	8.49	.71	4.18	2.48	19.52
56. 3887	7539	76	58.70	9.65	2.30	4.74	2.79	11.85
57. 3678	17748	97	66.52	11.92	5.23	4.74	2.47	14.54
58. 3659	8732	97	66.03	9.63	3.55	2.37	3.75	17.59
59. 3590	12952	93	74.97	14.14	5.32	6.77	2.49	20.00
60. 3463	6626	100	71.58	13.37	2.56	5.45	4.77	17.27
61. 3158	8698	86	62.28	7.65	3.68	3.43	3.01	15.28
62. 2812	4168	53	37.79	5.69	1.35	3.28	1.78	14.68
63. 2233	12743	92	63.42	5.24	2.97	5.74	2.59	10.71
64. 1630	19841	102	70.52	9.97	2.75	3.90	2.19	11.06
65. 1501	5330	85	73.99	16.36	8.75	8.42	7.53	24.04
66. 1338	9512	83	62.55	10.38	4.47	4.55	3.03	18.61
67. 1222	11143	103	88.22	7.98	2.32	4.56	2.49	18.86
68. 1118	8711	98	74.36	2.70	3.15	6.60	3.63	13.85
69. 963	23001	107	76.04	10.93	4.29	5.87	1.23	11.84
70. 715	5526	62	40.85	5.26	3.82	1.81	2.54	11.67
71. 678	6986	93	78.69	13.27	6.75	7.12	2.59	15.50
72. 35	7580	71	48.48	9.61	4.64	3.43	.67	11.16
73. -142	3032	78	52.28	3.43	3.30	2.83	3.14	7.47
74. -185	11687	92	68.05	5.32	5.84	6.55	2.12	11.31
75. -569	6938	73	46.73	3.72	----	1.06	2.68	13.13
76. -1407	20205	98	67.07	13.54	.12	4.12	.89	8.68
77. -1769	3264	53	40.19	14.78	8.51	4.44	3.81	22.17
78. -3915	15873	102	70.86	8.69	5.74	4.88	3.30	19.90
79. -6311	2436	52	46.00	12.84	11.67	11.41	4.66	30.11
80. -8331	7891	67	43.51	7.61	5.86	.20	3.43	14.17

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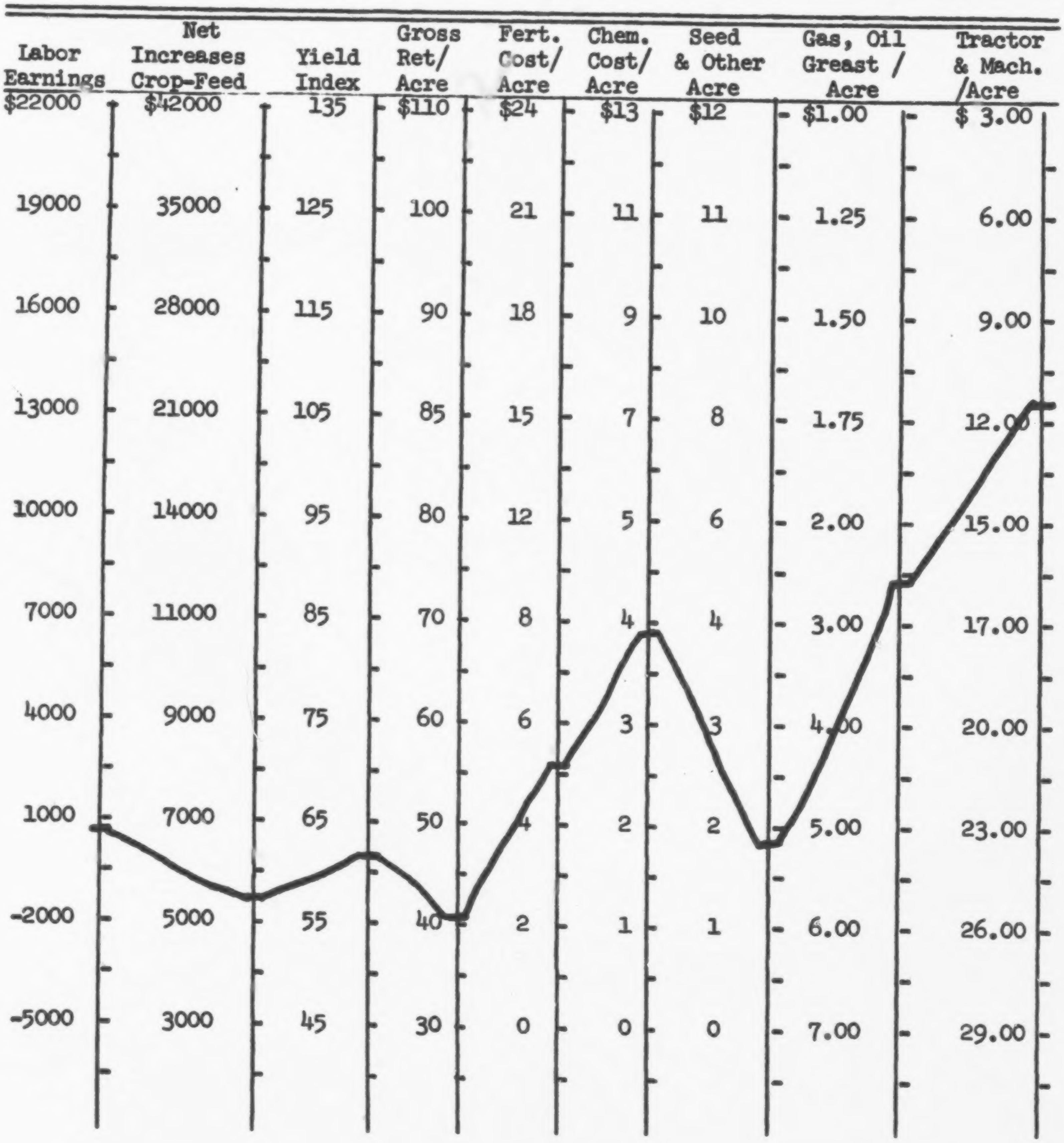
Name UNIT III-V 4

Comparison of Faribault Cropping Programs, 1968 - by Factors



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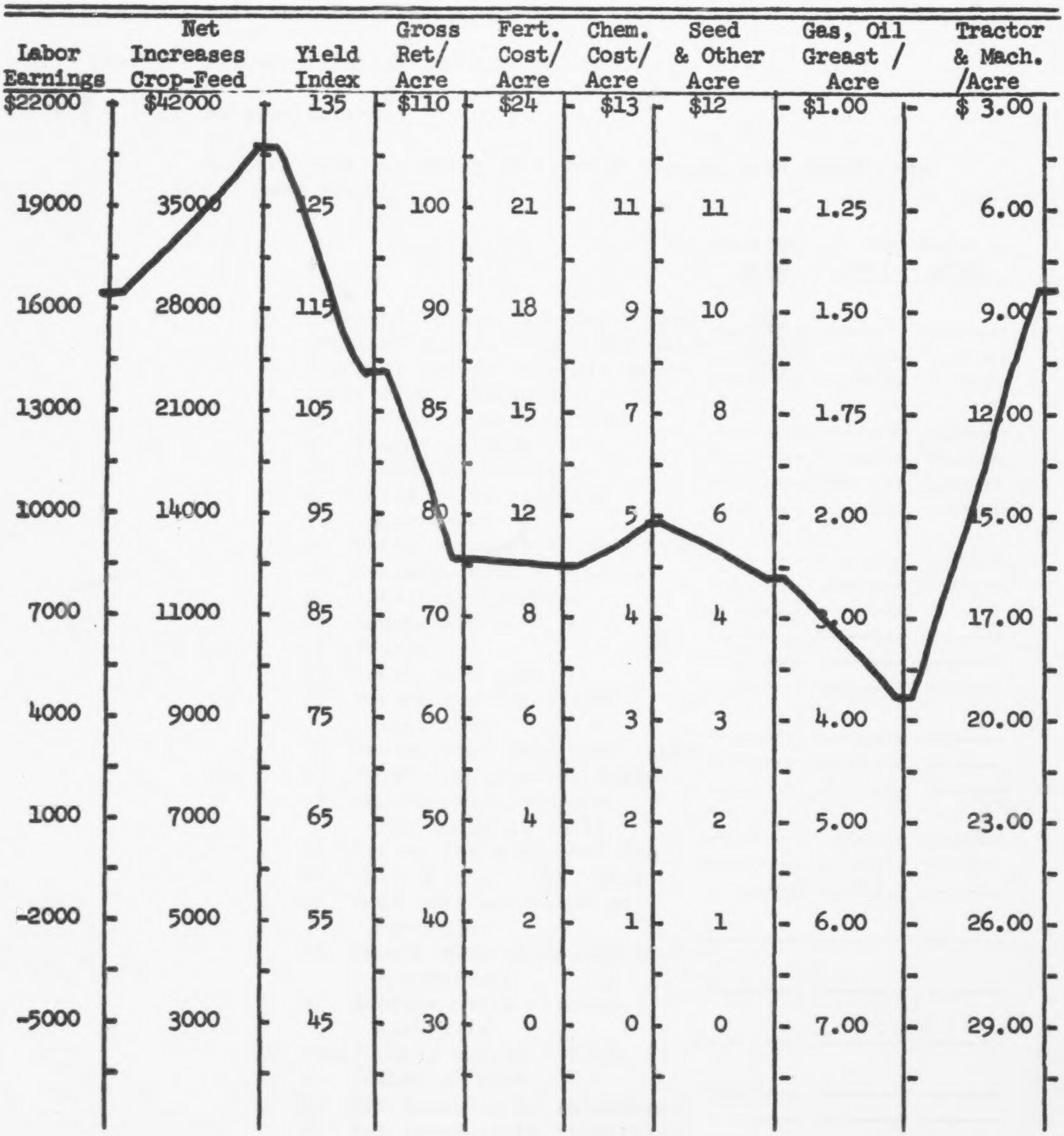
Name UNIT III-IV 3

Comparison of Faribault Cropping Programs, 1968 - by Factors



UNIT III - VI

EVALUATING THE LIVESTOCK PROGRAM

Teacher Objectives:

1. To teach families how to study their livestock enterprises and make self analysis of them.

Part I - Studying the Livestock Enterprises.

1. Subject Content:

A. How does our dairy enterprise compare with others and last year?

	Average	Our Farm	
	1968	1967	1968
1) Index of return from dairy cows	100		
2) Index of return from other dairy	100		
3) Index of return from all dairy	100		
4) Dairy cows - Table 12			
a) Average number of cows			
b) Pounds of milk			
c) Pounds of butterfat			
d) Total value produced (per cow)			
e) Total value produced (herd)			
f) Protein, salt & mineral			
g) Total concentrates			
h) Legume hay			
i) Silage			
j) Total feed cost			
k) Return over feed cost (per cow)			
l) Return over feed cost (herd)			
m) Total supplemental costs			
n) Return over feed and supplemental costs			
o) Return for $100 feed fed			
p) Feed cost per cwt. milk			
q) Feed cost per pound of butterfat			
r) Pounds milk per pound of concentrate			
s) Average price per cwt. milk sold			
5) Other dairy cattle - Table 13			
a) Number of head			
b) Net increase in value(head)			
c) Net increase in value(herd)			
d) Pounds of concentrate fed			
e) Total feed cost			
f) Return over feed (head)			
g) Return over feed (herd)			
h) Return for $100 feed fed			

	Average	Our Farm	
	1968	1967	1968
6) All dairy cattle - Table 14			
a) Total value produced (per cow)			
b) Total value produced(herd)			
c) Total feed cost (per cow)			
d) Return over feed cost (per cow)			
e) Return over feed cost(herd)			
f) Return over feed and supplemental costs (per cow)			
g) Return for $100 feed fed			

7) Comparison of dairy enterprises by farms.
8) Comparison of dairy enterprises by factors.
    a) A high earning herd.
    b) A low earning herd.

2. Suggested Teaching Activities and Experiences:

Provide each family with a worksheet and have them fill in the information from their analysis reports. Since some of the information will be taken from Tables 8, 12, 13, and 14, it may be well to suggest a procedure so this will be done in a minimum of time. Review the significance of the index of return and use the "Documentation" to illustrate how it is calculated. Point out that the index does not necessarily show profitability but rather how the herd compares with the average. Stress that expansion of the herd and efficiency are both reflected in return over feed cost for the herd while only increased production or efficiency is reflected on the per cow basis. In discussing return per $100 feed fed, it should be pointed out that costs other than feed must also be considered in determining profitability. Illustrating the break-even point step-by-step, is an easy way to bring in all costs related to the enterprise.

Use a transparency to show that "Comparison of Dairy Enterprises - by Farms" enables each family to study and compare its herd with all other herds in the class.

Using transparencies show graphs of a higher earning and a low earning dairy herd using "Comparison of Dairy Enterprises-by Factors". Have each family graph its own herd on a factors handout. Although some discussion will be worthwhile at this time, the major class discussion should be conducted in Part II of this unit.

3. References:

A\. Vocational Agriculture Farm Analysis, Individual Families, 1967 & 1968.

B\. Documentation for Farm Business Analysis,

C\. Farm Management Principles, Budgets, Plans.

Part II - Evaluating the Dairy Enterprise.

1. Subject Content:

A\. Reasons for Improvement of Dairy Enterprise:

1) Higher milk price ________
2) Higher production ________
3) Improved feeding practices ________
4) Lower feed costs ________
5) Improved roughage ________
6) Culling ________
7) Improved breeding ________
8) Improved herd health ________
9) Improved milking practices ________

B\. What are the strong points in our dairy herd?

C\. What are the weak points in our dairy herd?

D\. What changes are planned for this year or the future to take advantage of the strong points and minimize or eliminate the weak points?

2. Suggested Teaching Activities and Experiences:

Supply each family with a form on which to make the responses suggested under "subject content". Invite class discussion on each of these factors. This unit provides good opportunity for a class discussion on the many problems with which dairymen are faced.

During the discussion it would be most worthwhile to illustrate points using additional graphs of "Comparison of Dairy Enterprises - by Factors". This teaching device makes it possible to discuss real situations without introducing personalities.

The dairy enterprise has been used in this teaching unit as an example. Similar study and comparisons should be developed and used for each major livestock enterprise in the community.

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.

B. Using Farm Analysis Information.

Part III - Suggested On-Farm Instruction Activities.

Help evaluate the effect of changes in livestock practices on production levels and net returns. Aid in examining the need for changes in the management procedures for livestock. Discuss the implementation of new livestock practices and changes in organization. Determine the criteria by which changes will be evaluated. Inquire to determine if the mid-year crop and feed check has been completed.

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Comparison of Faribault Dairy Enterprises, 1968 - by Farms

Ret./ Feed Cost	B.F. per Cow	Farm Grain	Purch. Feed	Total Conc.	Dry Rough.	Silage	Past Cost	Total Feed Cost	Cost lb. B.F.	Ret./ $100 Feed	Index Cow	Index O.D.
1. 436	513	3917	270	4187	5634	6197	19.24	178	35	344	143	130
2. 427	453	6202	326	6528	5070	4056	-	190	42	325	135	141
3. 423	508	6689	642	7331	8054	2685	-	246	49	272	112	72
4. 421	482	4142	468	4610	6061	7323	9.85	196	41	315	130	103
5. 415	524	5855	312	6167	4754	7289	7.41	199	38	309	128	110
6. 406	530	4167	1361	5528	2208	18130	-	236	45	272	113	133
7. 404	488	6013	1156	7169	6271	9968	-	256	52	258	107	121
8. 393	487	5070	515	5585	4974	12804	13.23	225	46	275	114	90
9. 382	506	3832	600	4432	5183	10576	8.22	197	39	294	122	87
10. 380	519	3499	315	3814	9107	8061	2.50	211	41	281	116	134
11. 376	522	4473	517	4990	6390	14633	14.57	231	44	263	109	57
12. 367	444	3788	402	4190	7037	8519	12.72	203	46	281	116	139
13. 365	421	3929	998	4927	5977	9535	-	193	46	289	120	87
14. 365	481	4335	3663	7998	4661	12712	-	250	52	246	102	101
15. 362	461	4340	234	4574	6053	3561	16.29	182	39	299	124	74
16. 357	415	5084	244	5328	5662	3992	19.98	197	47	281	116	86
17. 347	467	4140	702	4842	5093	15862	19.12	239	51	245	102	151
18. 346	447	3969	301	4270	7729	14924	-	217	49	260	108	164
19. 338	411	4296	111	4407	8914	9137	11.28	215	52	257	107	86
20. 338	468	3118	796	3914	7889	11222	7.50	221	47	253	105	107
21. 332	455	5528	459	5987	5780	9354	11.63	224	49	248	103	200
22. 323	389	2624	137	2761	5106	8170	7.36	140	36	331	137	87
23. 321	438	5008	837	5845	6027	137	9.49	205	47	256	106	-
24. 320	406	3451	570	4021	4156	10520	18.44	189	47	269	111	112
25. 319	439	4027	833	4860	6769	6215	10.00	212	48	251	104	107
26. 313	441	4158	339	4497	6768	--	11.48	169	38	285	118	47
27. 313	418	4697	395	5092	6816	13881	-	220	53	242	100	107
28. 310	419	4711	935	5646	3725	11480	15.64	235	56	232	96	63
29. 304	420	5099	57	5156	6607	6006	9.07	195	47	256	106	88
30. 299	446	4146	154	4300	8093	10895	-	205	46	246	102	116

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Comparison of Faribault Dairy Enterprises, 1968 - by Farms, cont'd

Ret./ Feed Cost	B.F. per Cow	Farm Grain	Purch. Feed	Total Conc.	Dry Rough	Silage	Past. Cost	Total Feed Cost	Cost lb. B.F.	Ret/ $100 Feed	Index Cow	Index O.D.
31. 293	393	3646	423	4069	3913	15459	-	178	45	264	109	51
32. 283	429	5044	889	5933	9187	6714	-	251	59	213	88	134
33. 273	443	5723	496	6219	8320	9256	-	243	55	213	88	99
34. 270	372	5203	390	5593	6628	14264	-	233	63	216	90	111
35. 267	337	2444	377	2821	6607	-	4.40	128	38	308	127	110
36. 264	366	2782	629	3411	6113	5579	3.03	161	44	264	109	114
37. 264	450	4550	1479	6029	7067	12721	4.28	276	61	196	81	48
38. 256	375	4846	605	5451	5128	2963	16.41	205	55	225	93	57
39. 253	392	5788	63	5851	4403	11447	12.23	205	52	224	93	117
40. 252	345	3401	211	3612	5818	4273	13.77	158	46	259	107	145
41. 249	386	4074	727	4801	6466	4737	11.65	201	52	224	93	128
42. 248	377	5275	894	6169	6016	6098	15.33	219	58	213	88	112
43. 236	355	3874	430	4304	4623	6951	15.67	175	49	235	97	115
44. 219	442	6976	1477	8453	7267	6584	12.52	305	69	172	71	37
45. 218	455	6968	758	7726	10634	7873	9.37	302	66	172	71	126
46. 218	342	3107	650	3757	6577	8322	11.28	191	56	214	89	90
47. 215	340	2671	297	2968	4671	4079	-	120	35	279	116	94
48. 212	352	4590	747	5337	4220	7399	3.82	184	52	215	89	186
49. 201	345	5258	322	5580	5110	5402	13.87	195	56	203	84	97
50. 198	339	3308	168	3476	8038	11005	15.36	203	60	198	82	90
51. 104	272	2074	911	2985	4856	9054	3.05	172	63	161	66	73

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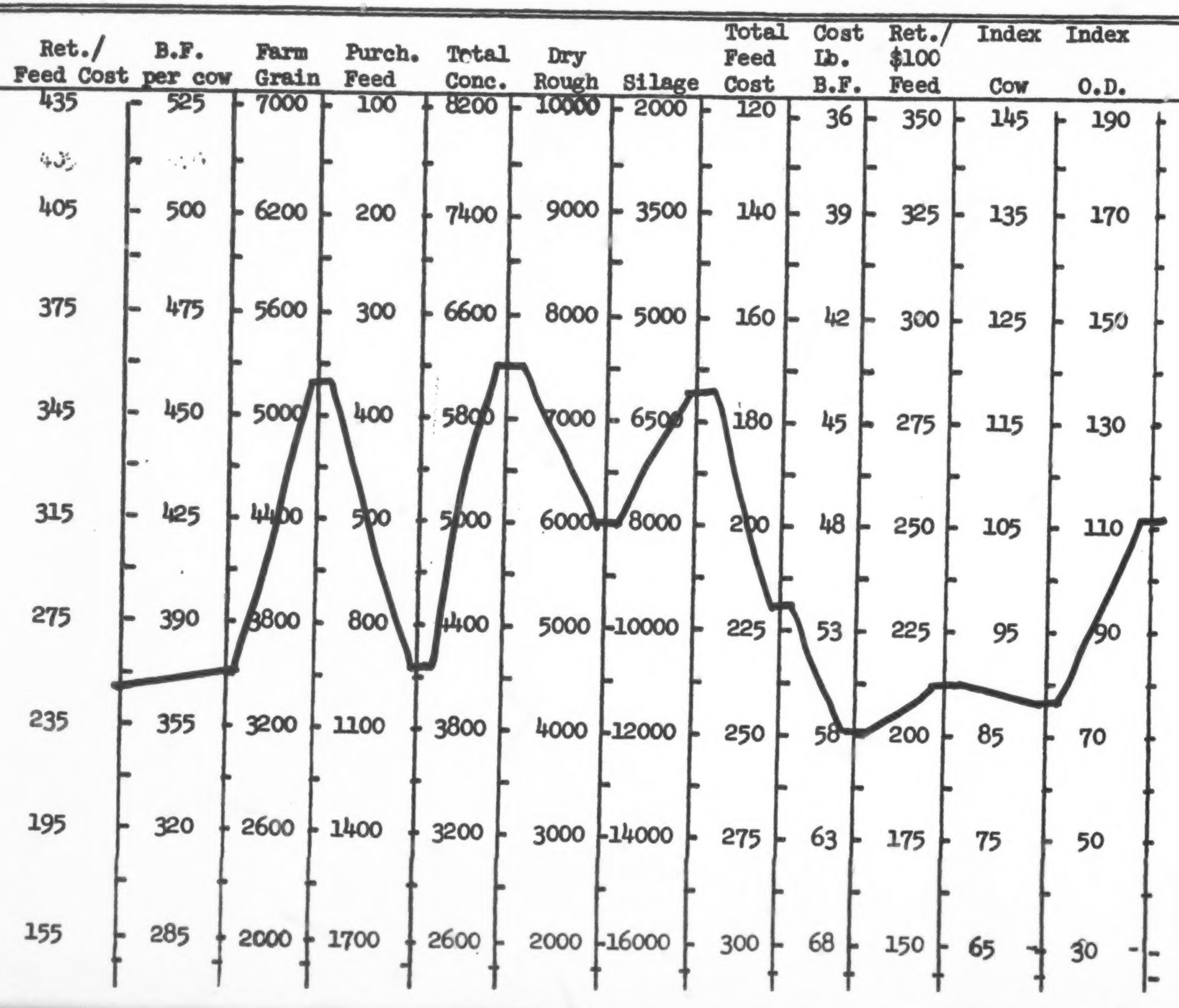
Name unit III-VI 3

Comparison of Faribault Dairy Enterprises, 1968 - by Factors



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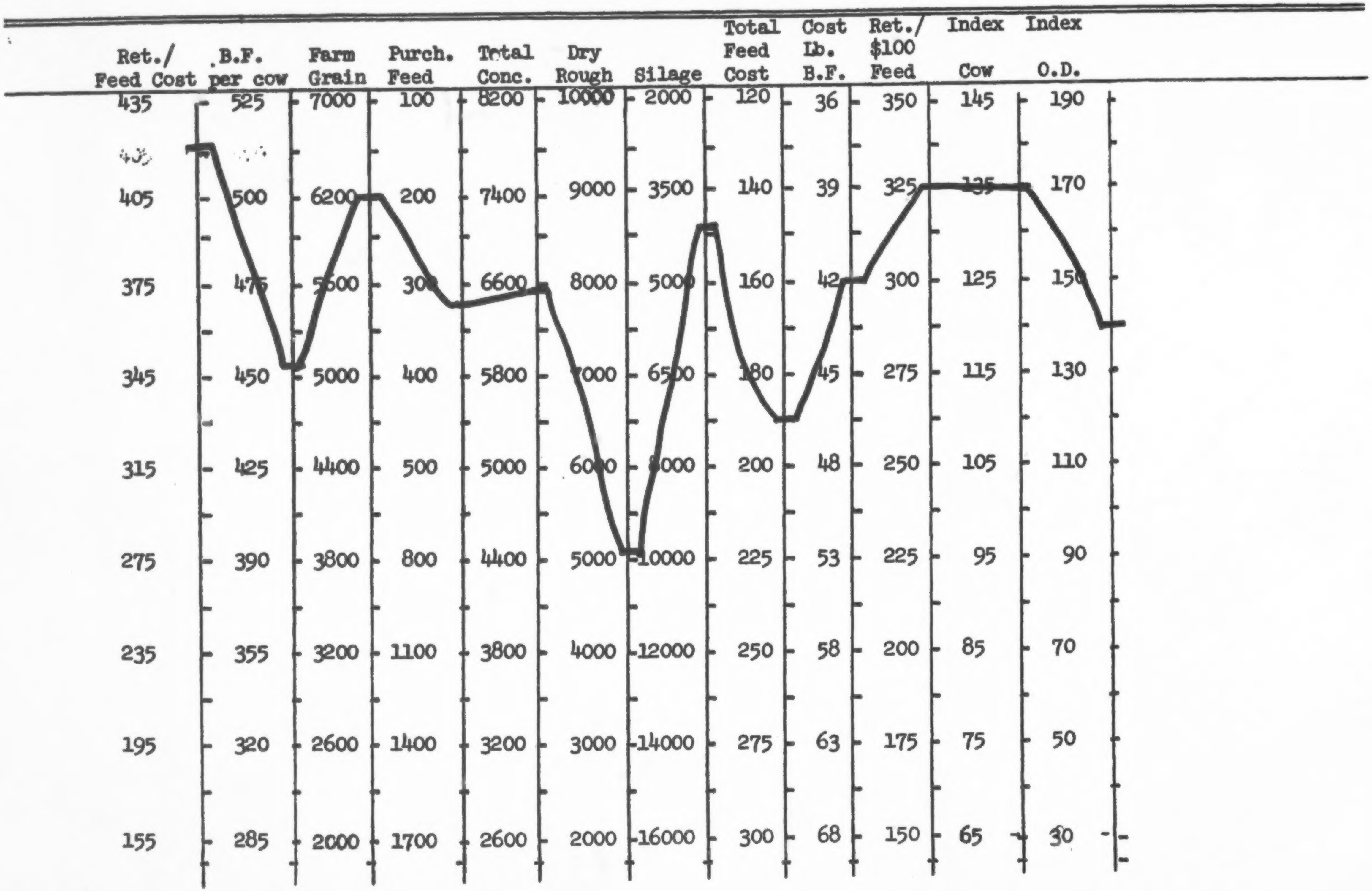
Name unit III-VI 2

Comparison of Faribault Dairy Enterprises, 1968 - by Factors



UNIT III - VII

EVALUATING OVERHEAD AND GENERAL FARM COSTS

Teacher Objectives:

1. To teach families how to identify and evaluate overhead an general farm costs.

Part I - The Overhead Costs.

1. Subject Content:

    A. Land.

        1) Interest on investment.
        2) Taxes.

    B. Buildings, fences,tiling, and other real estate.

        1) Expenses and net decreases.
        2) Interest on investment.

    C. Truck and Auto.

        1) Expenses and net decreases.
        2) Interest on investment.

    D. Tractors and crop machinery.

        1) Expenses and net decreases.
        2) Interest on investment.

    E. Livestock equipment.

        1) Expenses and net decreases.
        2) Interest on investment.

    F. General farm costs.

        1) Electricity.
        2) Labor.
        3) Taxes.
        4) General farm expenses.
            a) Insurance.
            b) Telephone.
            c) Office and bookkeeping expense.
            d) Other general expense.
        5) Interest
            a) Assumed interest on farm capital
            b) Interest paid.

Comparison of Overhead and General Farm Costs

	Average	Our Farm	
	1968	1967	1968
Truck & Auto (Farm Share)			
Tractors & Crop Machinery			
Electricity			
Livestock Equipment			
Building, Fences & Tiling			
Bare Land Value (Table 5)			
Labor			
Property Tax			
General Farm Expense & Telephone			
Interest on Farm Capital (Table 6)			
Interest Paid (Table 6)			
Cash Rent Paid (Table 6)			
Labor Earnings (Table 6)			

****

Investment and Cost Comparisons Per Unit

	Average	Our Farm	
	1968	1967	1968
Capital Investment Per Worker			
Tractor & Crop Machinery Per Work Unit			
Auto & Truck Expense Per Work Unit			
Electricity Per Work Unit			
Building, Fencing, Tiling Per Work Unit			
Power, Machinery, Equipment & Building Per Work Unit			
Investment Per Work Unit*			
Tractor & Crop Machinery Expense Per Crop Acre			

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*Average Farm Capital Divided by Total Work Units.

2. Suggested Teaching Activities and Experiences:

Begin class by pointing out that the Minnesota Vo-Ag analysis procedure is providing more detailed information as the computer program becomes more sophisticated. Power and machinery expenses are allocated to the various crops to give a more complete picture. Point out that there are expenses reamining that must be carried by the farm business as a whole and that these expenses must ultimately be charged against one or more enterprises if one is to get a true picture of net profit.

Although one can get a relative picture of enterprise profitability without further allocation of costs, it is important to have the realization of these additional costs.

Supply each family with worksheets on which to record the information called for under "subject content". Some guidance must be provided to help families find this information in the past two year's analysis reports. When this has been completed, begin the class discussion.

Point out that land cost, which is charged against individual crops, may be simply interest on bare land value plus land taxes and land maintenance expense. A more realistic cost may be cash rent value for the land since this return could be realized if the land were rented out or additonal land resources would be available, at least theoretically, at this cost. Discuss the remaining costs emphasizing that some part of the farm business must bear these costs. As each item is brought up, point out whether or not all or part of the cost has already been allocated to an enterprise. For those costs not allocated to an enterprise, raise the question of what enterprise should bear the cost. Discuss "interest on farm capital" and "interest paid", being certain to show the relationship between the two. With the high cost of borrowed money, some families may have a negative expense of interest on farm capital on Table 6A. Illustrate how this is reflected in Return to Capital and Family Labor and relate this to the amount of money that is available for family living, savings and debt reduction.

Although it may not be possible to correlate high or low unit costs with farm earnings, these items are of significance to the individual family. The objective should be to keep these costs at a level that will assure maximum income. Other factors being equal, the lowest cost per unit of accomplishment should result in the highest earnings. A review of the three general questions related to investments may be a good conclusion for this unit.

1. Will it increase profit?
2. Is it the best use of capital?
3. Will the profit be fast enough to repay the loan?

3. References:

A. Vocational Agriculture Farm Analysis, Annual Report.
B. Farm Business Management, An Instructor's Guide.

Part II - Suggested On-Farm Instruction Activities:

Review ways in which overhead costs for operating the farm can be reduced. Discuss the allocation of the overhead costs to the various enterprises or groups of enterprises to determine liability for paying for these costs. Review plans for changing the organization of the business and determine how these changes will affect overhead costs; both in total amount and in the distribution among enterprises. Examine the possible improvements in income that may occur as a result of better distribution of capital among the various enterprises.

UNITS III - VIII, IX AND X

MAXIMIZING INCOME

Teacher Objectives:

1. To teach families how to study their present program, develop alternative possibilities of crops and livestock and to develop a program to maximize income.

Part I - Developing the Plan.

1. Subject Content:

   A. Determining the Normal Crop and Livestock Program.

   B. Evaluating the Present Crop and Livestock Program.

   C. Determining Alternative Crop and Livestock Programs.

   D. Determining Building and Equipment Needs.

   E. Determining Changes in Expenses.

   F. Determining Changes in Income.

2. Suggested Teaching Activities and Experiences:

   The subject content of maximizing income falls into three natural categories; the present plan, alternative crop and livestock plans, and changing facilities, expenses and income.

   This is a very comprehensive and challenging lesson which will require at least three class meetings to complete. It has been identified as three teaching units to empahsize the need for considerable time for its completion.

   These units are not intended to be the final answer to farm reorganization. They are, however, an appropriate place for families to begin considering various possibilities of crops and livestock for their own situations. Each reorganization study is complicated by individual resources, desires, and abilities. These individual differences make it necessary to work closely with each family on a partial substitution budget to determine more reliable income possibilities. When doing this task, home farm production information will be taken from the farm analysis records and applied to the alternative budgets. The substitution budget demands such individualized treatment that it does not lend itself well to completion in large groups or classroom situations. It, however, will be one of the most worthwhile accomplishments on farm visits.

The Farm Organization and Income Possibility Worksheets suggested here illustrate many of the principles that can be applied to an individualized substitution budget. The worksheets can be used effectively in the classroom to introduce families to the processes of making alternative farm plans. It has the advantage of rapid, though sometimes misleading, conclusions. Calculations move along fast enough to hold interest and raise many questions which can be answered by a more complete study.

Supply each family with worksheets similar to those included with this unit. Using transparencies with the overhead projector, use a sample farm to illustrate the step-by-step procedure of dermining first the normal crop and livestock program followed by alternative plans #1, #2, and #3. Have each family complete on worksheet #1, its normal crop and livestock program using information from its own analysis report. A handout of supplementary information relating to prices, expected gains and other costs should be prepared to supply information not available from the analysis reports. After the completion of this section, invite class discussion related to the normal plan.

The second class session should begin with a discussion of the objectives of alternative plans. The approach to this kind of reorganization plan is to develop the most profitable cropping program within the limits of acceptable soil conservation practices. Reference should be made to Unit III for a review of the factors which may affect the most profitable combination of enterprises. This should be followed by a livestock plan in which roughage consuming livestock is planned to use the available roughages and concentrate consuming enterprises are added to the limits of available feed supply. Alternative plans #1, #2, and #3 should be completed during the second class meeting. After each step is completed an open class discussion should be invited and the objectives of the next step clarified.

Worksheet #4 will be completed during the third meeting. Considerable time should be spent discussing the planning and calculation of expenses brought about by the alternative enterprise plans. Guidelines for building and equipment needs should be made available by the instructor and several references should be available for the class members use.

Some caution should be exercised in the use of Units VIII, IX and X. Care should be taken to discourage families from concluding that they have arrived at a practical reorganization plan for their farm. Any reorganization to be undertaken by a family should be preceded with much study and consultation. Such study can best be done with families during individual on-farm instruction.

3. References:

   A. Vocational Agriculture Farm Analysis, Annual Report.

   B. Farm Management Principles, Budgets, Plans.

   C. Farm Management Economics.

D. Planning Production for Desired Farm Earnings.

E. Modern Concepts of Farm Machinery Management.

F. Planning Grain-Feed Handling.

G. Midwest Farm Planning Manual.

Part II - Suggested On-Farm Instruction Activities.

If a family is interested in examining alternative business organization schemes, help to compile the data necessary to assess the feasibility of each scheme. Using analysis data from the farm, project the costs and returns from the alternative organization plans. Be prepared to assist in determining capital needs and the return on capital investment that may be expected. Examine credit sources for needed capital and feasible repayment plans. It is the job of the instructor during these planning stages to assist with gathering and assembling data for evaluation of the alternatives but he must remain cognizant of the effect that changing a segment of the business through reorganization will have on the entire business operation.

worksheet # 1

Our Normal Crop and Livestock Program

Alt.#1 Effect of Improved Operational Efficiency On Income

CROPS	Acres	Yield per acre	Total Prod.	Operator's Sales			Labor Hours	
				Bu. Ton	Price	Value	Per U	Total
Corn								
Soybeans								
Small Grain								
Hay								
Silage								
Pasture								
TOTAL CROP		xxx	xxx	xxx	xxx		xxx	

Good ave. Yield	Increase		Value of Increase
	Per Acre	Total	
Inc. Crop Sales			

LIVESTOCK	No.	Prod per unit	Total Prod	Operator's Sales			Labor Hours	
				Units	Price	Value	Per U	Total
Dairy: Milk								
Cattle								
Beef Cows								
Feeder Cattle								
Sheep: Wool								
Meat								
Hogs								
Hens								
TOTAL LVSTK	xxx	xxx	xxx	xxx	xxx			
GRAND TOTAL	xxx	xxx	xxx	xxx	xxx		xxx	

Good Prod. Level	Total Prod.	Operator's Sales		
		Units	Pr.	Value
xxx	xxx	xxx	xxx	

Total Lvstk. ________

Normal crop sales ________

Inc. crop sales

GRAND TOTAL

Use Space For Calculations:

Work Sheet # 2

Alt.#2 Effect of Improved Organizational Efficiency on Income

1. Medium to Large Farm

A. Select the highest return cropping program and convert feed crops to hay and corn equivalents; cash crops to gross sales.

Crops	Acres	Yield	Total	Factor	Equivalent or sales	Labor Hours Per Acre	Labor Hours Total
Feed Crops							
Hay and T. Past.				=			
Pasture, perm				=		xxx	xxx
Silage				÷ 3			
			Total hay equiv.				
Corn				=			
Oats				÷ 2			
Barley				x .75			
			Total corn equiv.				

Cash Crops (Operator's Sales)	Acres	Yield	Total	Units	Price	Value	Labor Hours Per Acre	Labor Hours Total
Soybeans								
Wheat								
TOTAL		xxxxx	xxxxx	xxxxx	xxxxx		xxxxx	

B. Balance the crop and livestock program using average feed requirements shown on page 6.

1. Above hay equivalents will feed _____(number) of _____(dairy cows, etc.)
2. The livestock in B, 1 would require how many bushels of corn equiv.? _____.
3. The amount of corn equiv. left for other livestock = _____.
4. The number of hogs or hens that could be handled = _____.
   (consider feed, labor, facilities)
5. Corn equiv. left for sale if any = _____ x $_____.

C. Summarize the results

Livestock	No.	Unit	Prod.	Operator's Sales			Labor Hours	
				Units	Price	Value	Unit	Total
Total livestock	xxx	xxx	xxx	xxx	xxx		xxx	
Corn equiv. sales	xxx	xxx	xxx	xxx	xxx			
Cash crop sales	xxx	xxx	xxx	xxx	xxx	}		
Total crops & lvstk. (transfer total sales to page 4)								

2. Small Farm - Select the highest return per acre livestock enterprises

A. If highest return enterprise is a grain - consuming one, follow steps under 1. above.

B. If highest return enterprise is dairy:

1. Select number of cows desired and calculate hay equiv. and corn equiv. needed.
2. Determine whether acreage is sufficient to at least supply roughage needs.
3. Increase or decrease livestock numbers till desired balance is reached.
4. Consider purchasing additional grain if needed to obtain desired volume.

work sheet # 3

Alt #3 Effect of Acreage Expansion On Income

A. Select the highest return cropping program and convert feed crops to hay and corn equivalents; cash crops to gross sales.

Crops	Acres	Yield	Total	Factor		Equivalent or sales	Labor Hours Per acre	Labor Hours Total
Feed Crops								
Hay and T. Past.				=				
Pasture, perm				=			xxx	xxx
Silage				÷ 3				
			Total hay equiv.					
Corn				=				
Oats				÷ 2				
Barley				x .75				
			Total corn equiv.					
Cash Crops (Operator's Sales)				Units	Price	Value		
Soybeans								
Wheat								
TOTAL		xxxxx	xxxxx	xxxxx	xxxxx		xxxxx	

B. Balance the crop and livestock program using average feed requirements shown below.

1. Above hay equivalents will feed _____(number) of _____(dairy cows, etc.)
2. The livestock in B, 1 would require how many bushels of corn equiv.? _____.
3. The amount of corn equiv. left for other livestock = _____.
4. The number of hogs or hens that could be handled = _____.
   (consider feed, labor, facilities)
5. Corn equiv. left for sale if any = ____ x $_____.

C. Summarize the results

Livestock	No.	Unit	Prod.	Operator's Sales Units	Operator's Sales Price	Value	Labor Hours Unit	Labor Hours Total
Total livestock	xxx	xxx	xxx	xxx	xxx		xxx	
Corn equiv. sales	xxx	xxx	xxx	xxx	xxx			
Cash crop sales	xxx	xxx	xxx	xxx	xxx			
Total crops & lvstk. .(transfer total sales to page [illegible])								

Average Feed Requirements

	Dairy	Dairy Steers to: 700#	Dairy Steers to: 950#	Sheep	Beef cows	Feeder Cattle high roughage calves	Feeder Cattle high roughage yrlgs.	Feeder Cattle high grain calves	Feeder Cattle high grain yrlgs.	Hogs	Hens
Hay Equiv. (Tons)	8-9	1.3	1.6	.4	2-3	1.5	1.4	.5	.4	-	-
Corn Equiv. (Bu.)	70-40	20	60	3	-	46	36	62	60	15	1.5
Protein Sup. (#)	300	150	400	0	0	400	340	400	320	115	45

worksheet # 4

Farm Income and Expenses

	Normal or Average	Alt. #1	Alt. #2	Alt. #3
Total Farm Expenses				
Livestock purchased for resale				
Labor hired				
Repairs, maintenance				
Interest on existing debt				
Feed purchased				
Seeds, plants purchased				
Fertilizer, lime				
Machine hire				
Supplies purchased				
Breeding fees, veterinary				
Gas, fuel, oil				
Taxes and insurance				
Utilities, telephone & electricity				
Rent				
Freight, trucking				
Other				
TOTAL FARM EXPENSES				
Net Cash Farm Income				
Total sales (from pages 1,2,3)				
Less total farm expenses				
NET CASH FARM INCOME				
Change in Investment				
Land & buildings				
________________				
________________				
________________				
Total added investment in land & bldgs.				
Annual principal repay: Total investment ÷ ___ yrs.				
Interest on added investment				
Equipment & livestock				
________________				
________________				
________________				
Total added investment in equip. & lvstk.				
Annual principal repay: Total investment ÷ ___ yrs.				
Interest on added investment				
TOTAL PRINCIPAL REPAY. & INTEREST				
Remaining Net Cash Farm Income (Net cash less principal repay. & int.)				

UNIT III - XI

FARMSTEADS, BUILDINGS, MATERIALS HANDLING

Teacher Objectives:

1. To teach the principles of efficient farmstead arrangements.
2. To make families aware of the intense need for detailed planning before investments in buildings and materials handling systems.

Part I - Planning An Efficient Farmstead.

1. Subject Content:

   A. Purpose of farm buildings.

      1) An important farm resource - the production plant.
      2) Each building a segment of the production system.
      3) Protects machinery, crops, livestock and supplies.
      4) Saves labor and time.
      5) Provide a safe and healthful environment.
      6) Furnish attractive setting for the farm home.

   B. Justification of farm buildings.

      1) Must contribute to higher net income.
         a) Provide environment for the efficient use of feed.
         b) Provide for the efficient use of labor.

   C. Arrangement of farm buildings.

      1) Locate farm buildings away from residence.
         a) Away from prevailing winds to minimize odors and flies.
         b) At least 100 to 150 feet from residence to livestock.
      2) Space major buildings apart to reduce fire hazard.
      3) Arrange for efficient movement of livestock.
      4) Arrange for an efficient flow of crops and feed.
      5) Space buildings for convenient access to fields and pastures.
      6) Locate buildings, lots, drains and wells to prevent contamination of water supply.
      7) Place shelterbelt on north and west sides of farmstead.
      8) The farm court should be 100 feet or more in its smallest dimension.
      9) Machine shed should be convenient to residence and to field lanes.
      10) Consider noise nuisance when placing large fans and motors.
      11) Provide all weather service road to livestock area and feed processing centers.

D. Special considerations.

1) Plan the centers of operation.
    a) The machinery storage and service center.
    b) Feed storage and processing center.
    c) Separate livestock centers.
2) Plan materials handling in detail.
    a) Provide for organized material flow.
    b) Think and plan in terms of a system not individual units.

E. Types of buildings to consider.

1) Simple but substantial structures.
2) As flexible as possible for future changes or expansion without losing efficiency in present use.
3) Mechanized or adaptable to mechanized materials handling.
4) Insulated and ventilated for year around use.
5) Attractive or inconspicuous in appearance.

2. Suggested Teaching Activities and Experiences:

Discuss the material outlined under "subject content".

Systems should be the emphasis in this unit. As farms become larger and the output per man increases it becomes more important to think of the entire farmstead as a production plant with each production center organized to coordinate with the other production centers. Promote discussion from the class on their own farmsteads. Since most families have not been involved in the original layout of their own farmsteads, they will be free with their discussion of problems to consider. Buildings crowded together, no room for expansion, poor drainage, no room for a shelterbelt, too far from feed to livestock, will be a few of the of the comments offered. This will provide the mood and setting for this unit. Stress that every building, over its period of useful life, must pay its own way through savings or production. Using overlays on the overhead projector or a flannel graph, the instructor should show an ideal building arrangement. The relationship among parts of the farmstead can be illustrated with a diagram showing the major movements of materials about the farmstead.

The instructor may wish to prepare a checklist for each family to use in evaluating its own farmstead arrangement. A good checklist of this kind is found on pages 135-137 of Getting Started in Farming.

Have each family draw up the present farmstead arrangement to approximate scale. Have them temporarily sketch in buildings which they plan in the near future. This job should be completed at home so the distance and locations will be relatively accurate. A farm visit may be used to assist the family in completing this task. The farmstead arrangement plan will be used to help determine building locations in the future.

The farm building unit may generate interest in some specific area of the farmstead. Planning the grain-feed handling system is an area of high interest at this time.and could well take up entire class period.

3. References:

A. Midwest Farm Planning Manual.

B. Planning Grain-Feed Handling.

C. Farm Management Principles, Budgets, Plans.

D. Getting Started in Farming.

Part II - Suggested On-Farm Instruction Activities:

Review plans for buildings and improvements. Discuss the checklist used in the class. Aid the family in preparing or improving the diagram of their farm building layout. Relate the building arrangement to the planned business organization. If necessary, secure the services of a specialist to assist in planning any changes in the building arrangement.

UNIT III - XII

PLANNING TRANSITIONAL STAGES

Teacher Objectives:

1. To furnish background information for transitional plans of farm reorganization.

Part I - Making Plans for Changes in the Farm Business.

1. Subject Content:

   A. When to make adjustment in the farm business.

      1) Major adjustments seldom and sparingly.
      2) Minor adjustments continually.

   B. Basis for making adjustments.

      1) After complete plans and budgets.
      2) On basis of recent records analysis.

   C. Transitional problems.

      1) What will be the effect on income?
      2) What buildings will be needed?
      3) What equipment will be needed?
      4) What capital will be needed?
      5) How will labor requirements change?
         a) Amount.
         b) Distribution.
      6) How long will the transition take?
      7) When is the best time to begin the change?
      8) Where can I go for needed help and information?

2. Suggested Teaching Activities and Experiences:

When a farm family decides to make major changes in the organization of the crop and livestock program, it brings on many new possibilities and problems. Because of the nature of the whole farm business, it is not possible to discontinue one enterprise and immediately begin with another in its place. Buildings, equipment, feed, labor and management skills will need to be adjusted or added. All of the intermediate steps in making the changes should be carefully planned. Because transitional stages will be different in every reorganization, it is very difficult to find a tried procedure to follow. References even relating to this area of planning are both very general and very sketchy. A group discussion on the questions raised in the subject content outline will make the families aware of the need for searching out the information that is needed. This discussion may also raise other questions that have not been apparent to this writer. Transitional planning will require many farm visits before the reorganization, during the reorganization and after the change-over has been completed.

3. References:

   A. Farm Management Economics.

   B. Midwest Farm Planning Manual.

   C. Farm Management Principles, Budgets, Plans.

Part II - Suggested On-Farm Instruction Activities.

If the family is planning a major change in business organization, assist them in drawing up a plan for business operation during the transition. Be alert to the need for planning income for family living during any reduced income period of the transition. With the aid of analysis reports, help determine what these needs are. Be prepared to aid in securing the counsel of specialists while planning for and during the transition to a different business organization. It would be worthwhile for instructors to review the decision making process to remind themselves of those steps for which they have little or no responsibility. Inquire to determine if any assistance is needed in closing the record for analysis.

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CHAPTER VIII

POSTSCRIPT

The tremendous technological revolution in agriculture over the past two decades has intensified the problems of the farm family. Adult instruction in agriculture over this period of time has contributed materially to farming and to farm life. It is evident, however, that the values of adult farmer instruction lie more in their potential than in the contributions thus far.

This program of instruction has been set up with core material in farm management classes which progress from beginning farm records through the farm business analysis toward farm reorganization. One of the strengths of this program is the involvement of the farm operator and his wife in a serious study of the home farm business. This farm management core should be supported by intensive units in mechanized farming and individual enterprises during each of the years of instruction. The entire program is strengthened by planned farm visits which will serve to individualize the instruction.

Farm management in the public schools is intended to be a year around continuing program with more empahsis on "what to do" and "why" than "how to do it." The analysis centers at the area vocational-technical schools become a vital part of the total program, not only in the mechanics of analyzing the completed farm record but also in the interpretation of the analysis reports.

Vocational agriculture instructors must continually develop new materials for use in group and individual instruction. Preparation of these materials often requires more information than is readily available in the local vocational agriculture department. Agriculture coordinators in the area vocational-technical schools, researchers at the universities, branch experiment stations and commercial firms must remain alert to the needs for reliable information to be used in the management education program. Management is primarily a decision process. Sound decisions are dependent upon good information.

Vocational agriculture instructors in other states who use the farm management approach to adult education should find this course of study of interest. While the farm record book in use and the business analysis may be slightly different, the method of instructing families interested in studying their own business should not be much different.

Tha authors believe that a strong America is dependent upon a vigorous and productive agricultural sector. This course of study is designed to help educators build strength and vigor in the farm businesses of rural America.